

SERVICE MANUAL

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Preface

This manual is applied to H27 0.5” DMD SXGA digital projection system. It’s the mode of single Panel, 200 Watt Lamp and 854(H) x 480(V) resolution. The manual gives you a brief description of basic technical information to help in service and maintaining the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background. Send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

NOTICE :

The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in further edition.

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Manual Version 1.0

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Introduction

1-1 Product Highlights

- Target is to create the highest quality entry level home theatre projector in the market
- TIDMD, 0.5" 480PDDR SXGADigital Mirror Device
- Uses Single 16:9 854 x 480 DMD
- Uses 2x six segment color wheel RGB
- High end scaler DDP2000 with 3:2\2:2 Pull Down
- Lightweight ID for a total weight 5.5 lb.
- SCART RGB support via an adaptor
- 35 +/- 2 dBA in normal mode
- On-Screen menu with 7 languages.
- Four types of projection method. (Front desktop, Front Ceiling, Rear desktop, Rear Ceiling)
- Four types of display mode. (Normal, Game TV, Movie or User for selections). ^{*Notice}

** Notice :
All modes except "Normal Mode" are fixed values. Only "Normal Mode" can be adjusted for user's preference.*

- CoolingSystem
 - a. Advanced air flow
 - b. Two fans with low system acoustic noise level
 - c. Temperature control circuits with adaptive voltage control fan speed.
- Tilt angle : 7 degrees with elevator mechanism
- IR receivers : Front and back of projector
- Power supply : Input 100-240V, 50/60Hz
- Power Consumption : 265W+-10% Full Power

- Terminals:
 - a. One 29-pin DVI-I connector for Digital signal with HDCP input.
 - b. One D-Sub 15-pin female connector for analog RGB / HDTV / component video / SCART RGBSync input.
 - c. One Mini DIN 4-pin for S-Video Input
 - d. One RCA Jack for Composite Video Input
 - e. Three RCA Jacks for component video / HDTV input
 - f. One Mini DIN 3-pin for RS232
- Input signal spec
 - a. PC Signal
 - b. Hsync Frequency 31.5 ~ 100 kHz
 - c. Vsync Frequency 56 ~ 85 Hz
 - d. Video Signal RGB (PC)
 - e. Analog RGB 0.7Vp-p, 75 ohm
 - f. Analog RGB 1Vp-p, 75 ohm, Sync. signal
 - g. Separate TTL H, V Sync.
 - h. Composite TTL Sync.
 - i. Video
 - j. Composite video 1Vp-p, 75 ohm
 - k. S-video Luminance 0.714Vp-p, 75 ohm
 - l. Chrominance 0.286Vp-p, 75 ohm
- Video compatibility :

NTSC : M (3.58MHz), 4.43 MHz, 480i

PAL : B, D, G, H, I, M, N; 576i

SECAM : B, D, G, K, K1, L

HDTV : 480p, 576p, 720p, 1080i
- WVGA / Compression : by using “DDP2000” Chips to compress SVGA/XGA/SXGA image into WVGA display.
- Keystone correction : +/- 16 degree
- Brightness:

Specification : 800 lumens ; 520 lumens (minimum)
- Contrast ratio :

Specification : 2300:1 or higher full on/full off ; 1300:1 full on/full off (minimum)

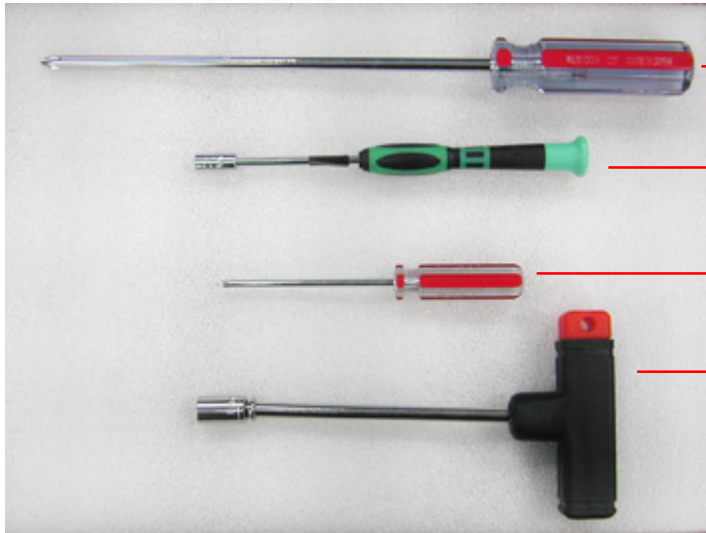
- Uniformity:
Specification : 85% (Japan standard)
- Displayable colours : 16.7 million colours 256 shades of gray
- Color temperature : 7500° K (Video) Adjustable from 6500° K to 9500° K
- Lamp type : 200W lamp with ECO mode supported.
- Lamp life: 2000 hours Brite mode
3000 hours ECO mode
1500 hours to 50% survival typical
- Projection lens : F/ 2.6~2.8, f = 22.34 ~ 26.8mm. Zoom Lens
- Projection screen size : 30.1" to 241.6" (Diagonal for 16:9)
- Projection distance : 1.5M ~ 10M
- Throw ratio : 1.87~2.25:1 distance/width
- Operational noise :
Specification : 28dB (Normal mode), 32 dB (Brite mode)
- Temperatures :
 - a. Operating: 5-35°C, 80% humidity (Max.)
 - b. Storage: -20 - 60°C, 80% humidity (Max.)
- Altitude :
 - a. Operating 5-35°C @ 0 - 2,500 ft
5-30°C @ 2,500 - 5,000 ft
5-25°C @ 5,000 - 10,000 ft
 - b. Storage 40,000 ft (Max.)
- MTBF : Operating more than 12,000 hours (90% Confidence Level)

1-2 Computer Compatibility (Analog and DVI)

Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]
VGA	640 x 350	70	31.5
	640 x 350	85	37.9
	640 x 400	85	37.9
	640 x 480	60	31.5
	640 x 480	72	37.9
	640 x 480	75	37.5
	640 x 480	85	43.3
	720 x 400	70	31.5
	720 x 400	85	37.9
WVGA	854 x 480	60	32.2
SVGA	800 x 600	56	35.2
	800 x 600	60	37.9
	800 x 600	72	48.1
	800 x 600	75	46.9
	800 x 600	85	53.7
XGA	1024 x 768	60	48.4
	1024 x 768	70	56.5
	1024 x 768	75	60.0
	1024 x 768	85	68.7
SXGA	1152 x 864	70	63.8
	1280 x 1024	60	63.98
MAC 16"	832 x 624	74.55	49.725
MAC 19"	1024 x 768	75	60.24
MAC	1152 x 870	75.06	68.68
MAC G4	640 x 480	60	31.35
i Mac DV	1024 x 768	75	60
i Mac DV	1152 x 870	75	68.49

Disassembly Procedure

Equipment Needed



Screw Bit(+) : 107

Hex Sleeves 5mm

Screw Bit(+) : 101

Hex Sleeves 8mm

Appearance

The Front Side

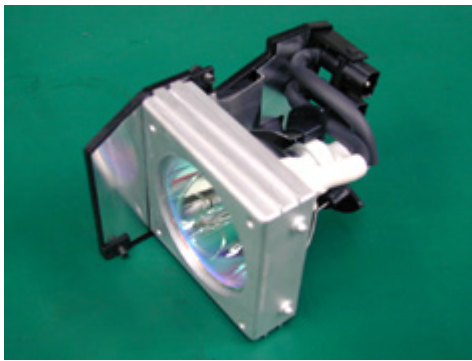
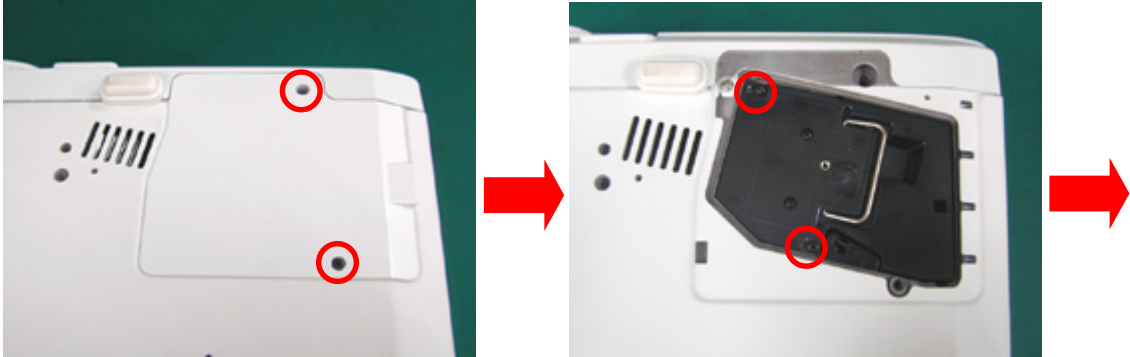


The Rear Side



2-1 Removing Lamp Module

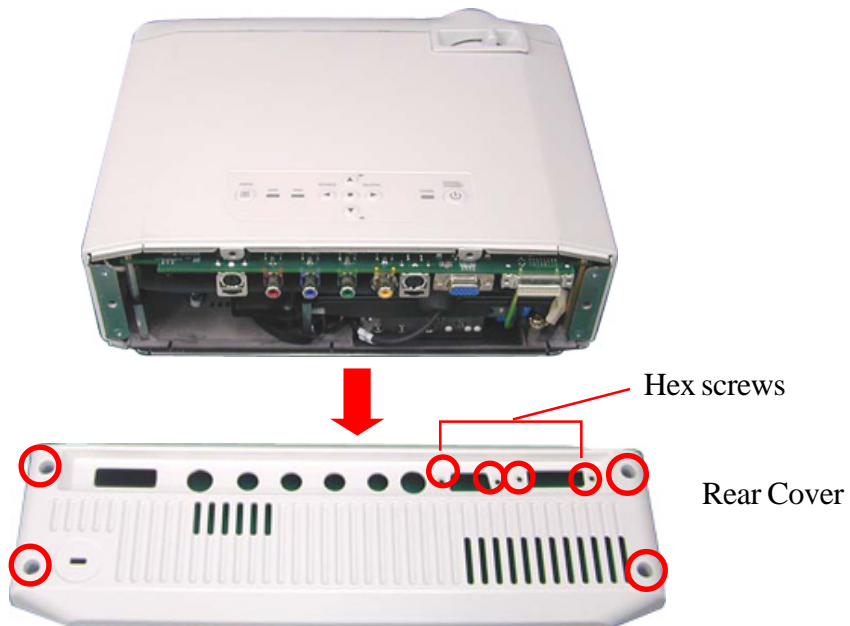
1. Turn over the unit.
Loosen 2 screws to remove Lamp Cover.
Loosen 2 screws to pull out Lamp Module.



Lamp Module

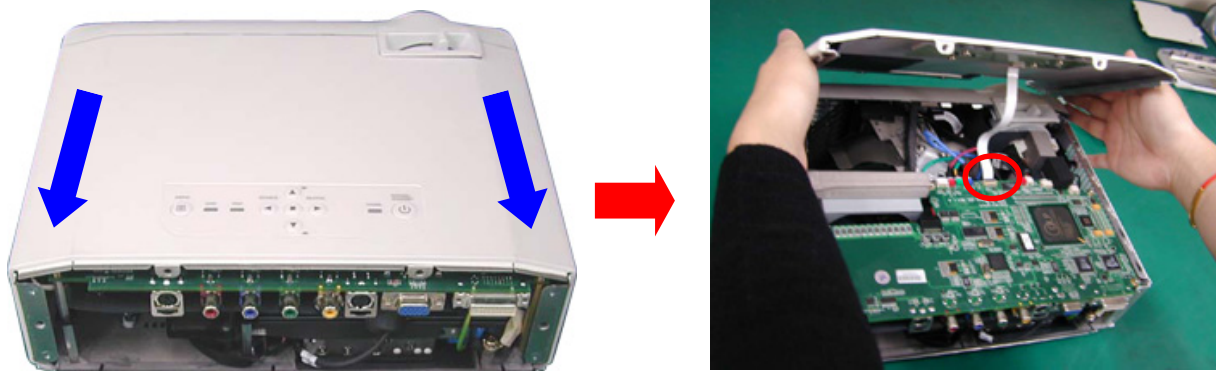
2-2 Removing Rear Cover, Keypad Board, Top Cover and Main Board

1. Unscrew 4 screws and 4 hex screws to remove Rear Cover.

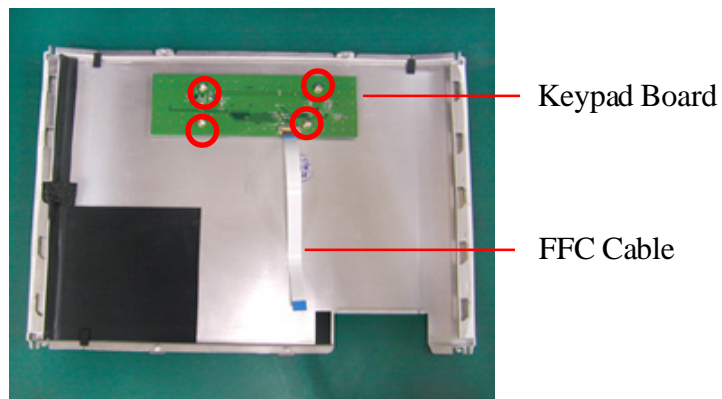


2. Pull out the Top Cover (as the blue arrow show) to remove it and then disconnect the FFC cable.

Notice : Be careful, don't put forth your strength too hard, in case the FFC cable breaks off.

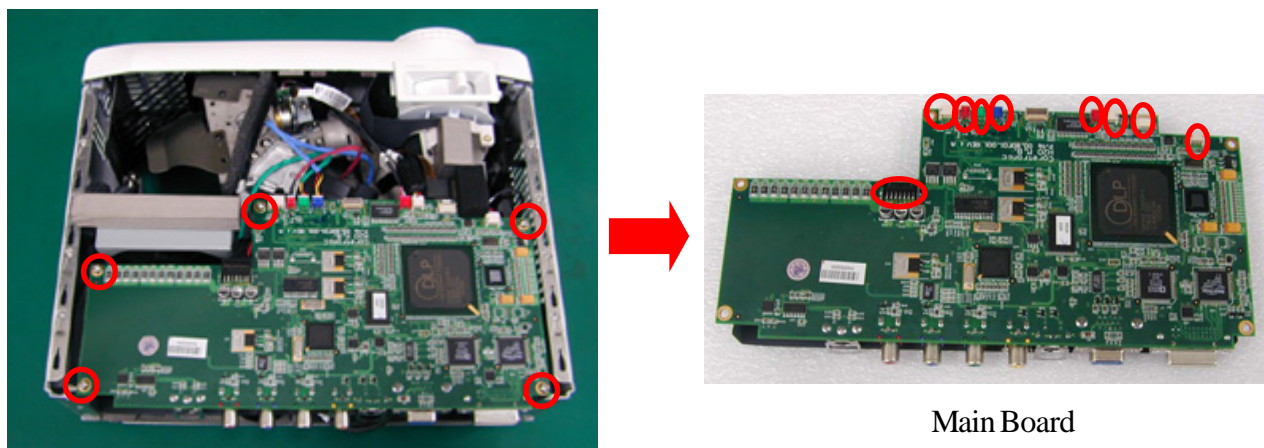


3. Unscrew 4 screws to remove Keypad Board and Control Key Rubber (under Keypad Board)



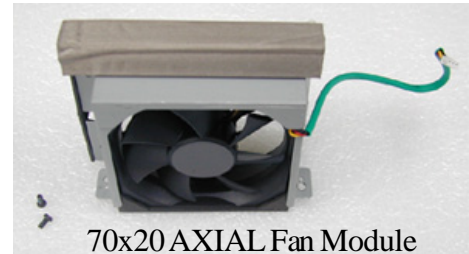
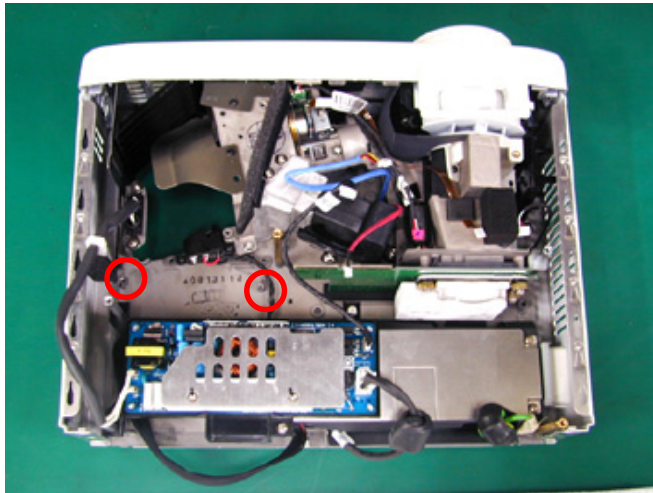
4. Unscrew 5 screws and disconnect 9 connectors, then remove Main Board.

Notice : Because there is a connector under Main Board and linking to DMD Board, you should lift up to remove Main Board.

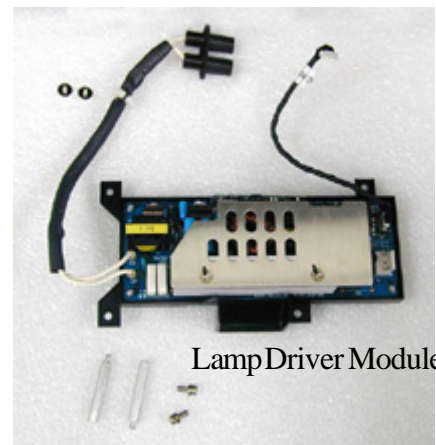
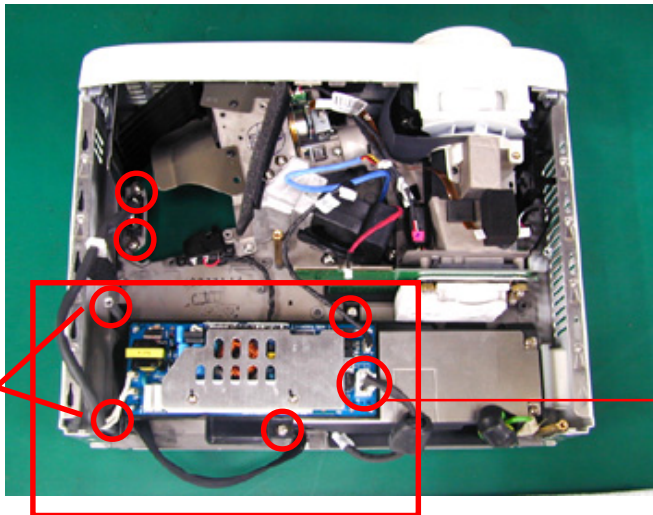


2-3 Removing 70x20 AXIAL Fan Module, Lamp Driver Module, Interrupt Switch and LVPS Module

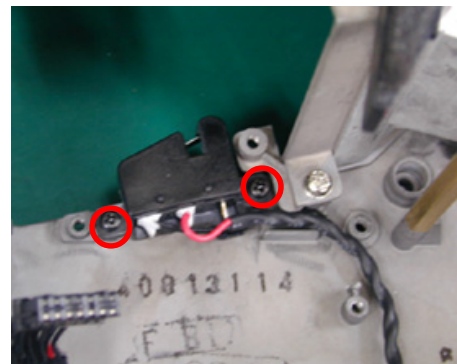
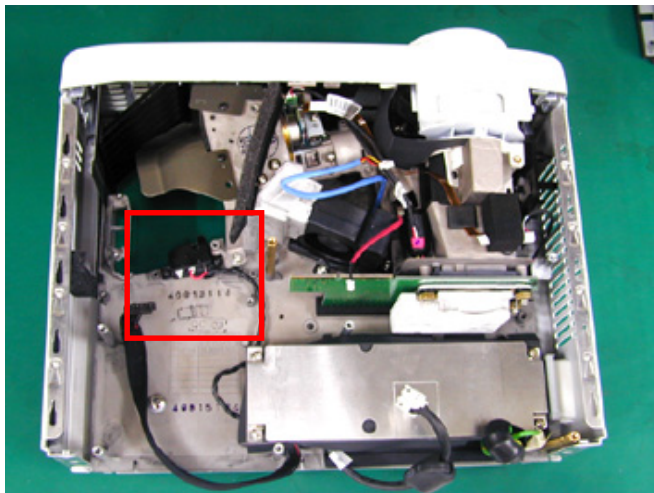
1. Unscrew 2 screws to remove 70x20 AXIAL Fan Module.



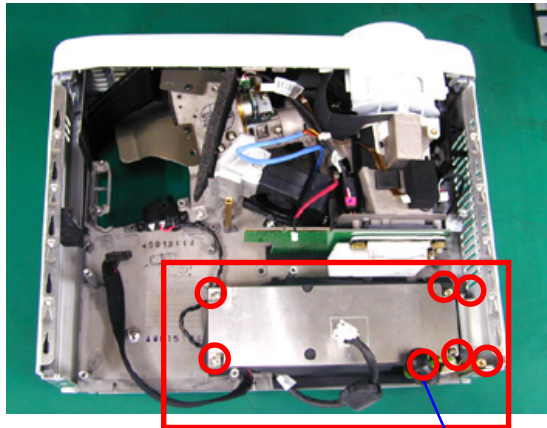
2. Unscrew 4 screws and 2 hex spacers and disconnect the connector to remove Lamp Driver Module.



3. Unscrew 2 screws to remove Interrupt Switch.



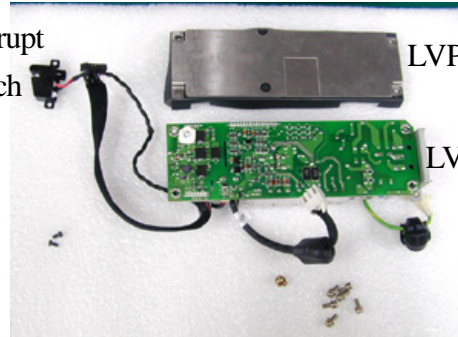
4. Unscrew 7 screws (one of 7 screws is used by Grounding) to remove LVPS Module.



used by Grounding



Interrupt
Switch



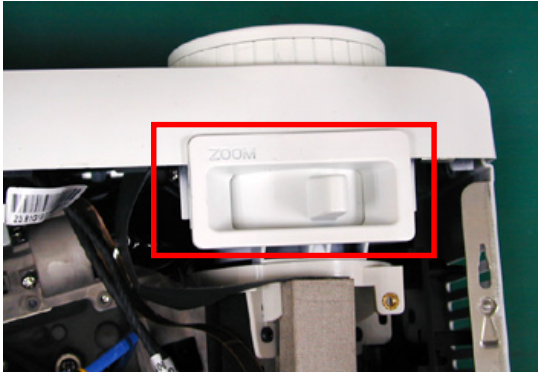
LVPS Plate

LVPS Module

2-4 Removing Front Cover Insert, Front Cover, IR Receiver Board and Zoom Ring

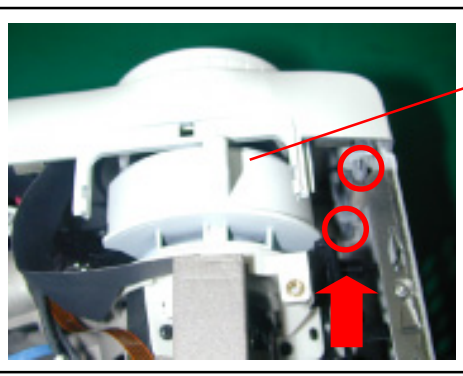
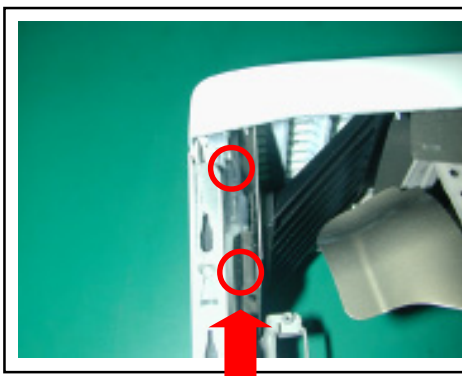
1. Remove Front Cover Insert.

Notice : Press two sides of the Front Cover Insert to lift it up.



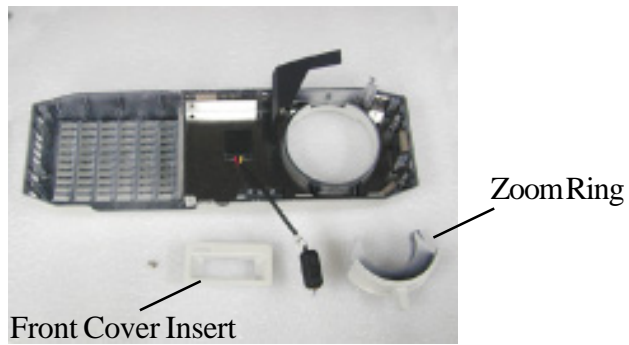
2. Unscrew one screw, then loosen 4 tenons inside of the Front Cover. Finally remove Front Cover.

Notice : Lift up the four plastic plates and you can loosen the tenons as well as the Front Cover Module.

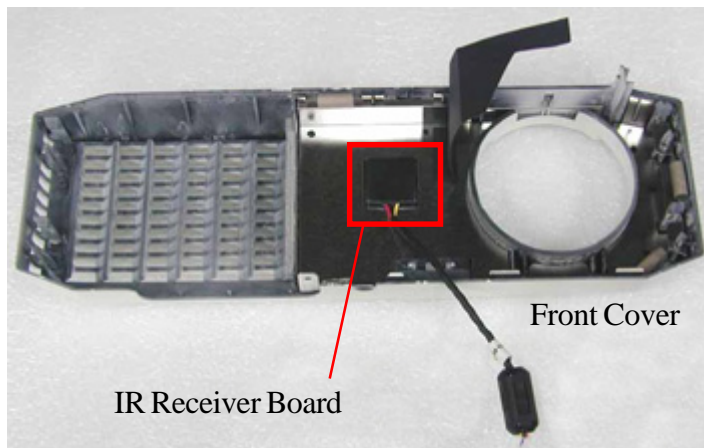


ZoomRing

3. Remove Zoom Ring.

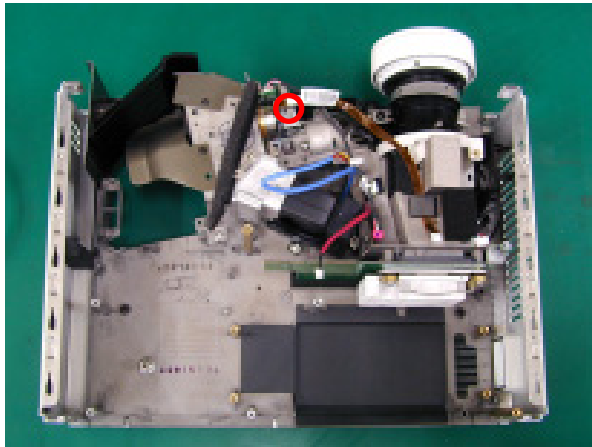


4. Take off the Mylar to remove IR Receiver Board.



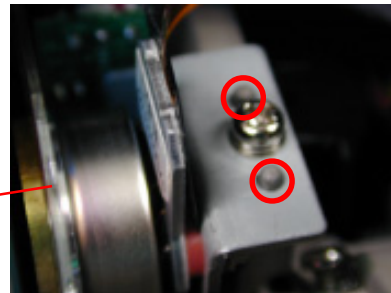
2-5 Removing Color Wheel Module and Engine Module

1. Unscrew one screw to remove Color Wheel Module from Engine Module.



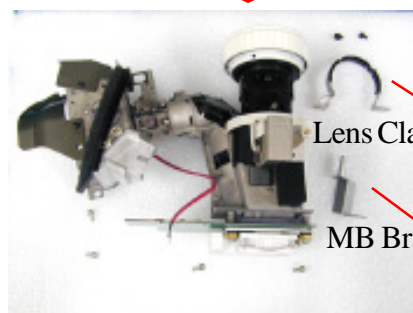
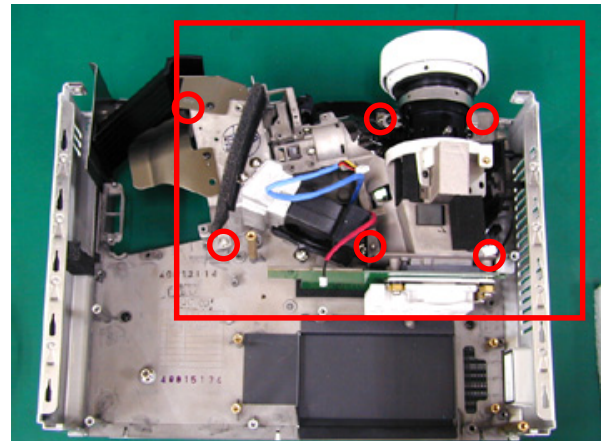
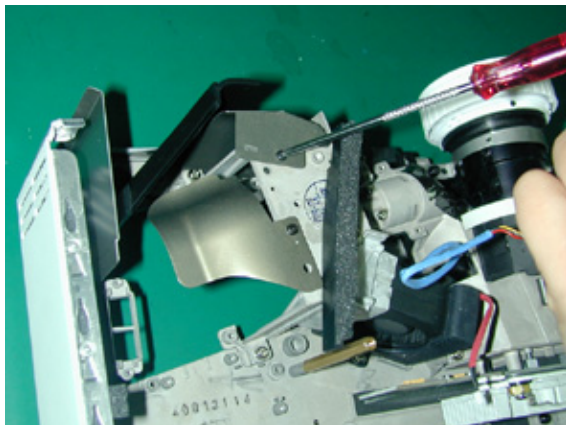
Notice : Please screw well (the two tenons should be stick out) when you assemble Color Wheel Module.

Color Wheel Module



Two tenons

2. Loosen one screw from Engine Base, then unscrew 6 screws to remove Engine Module.

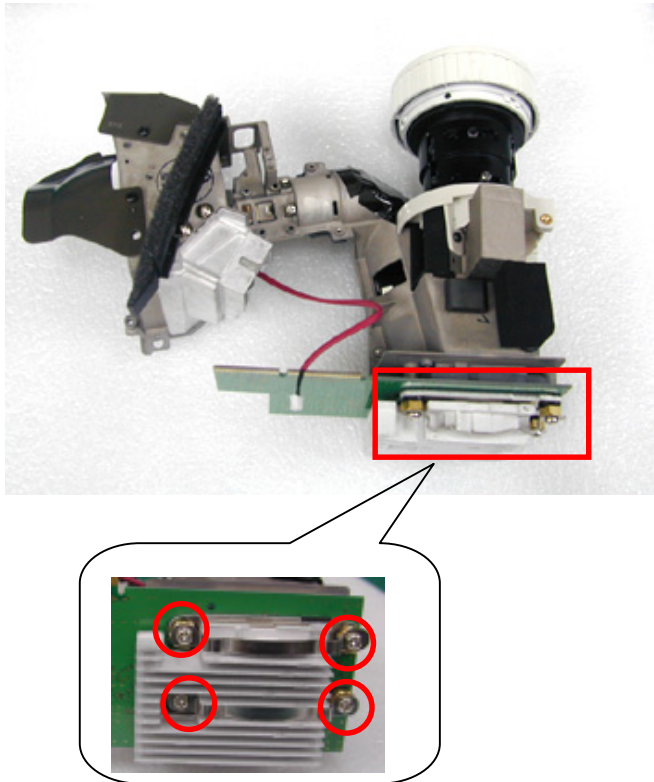


Lens Clamp/Stopper

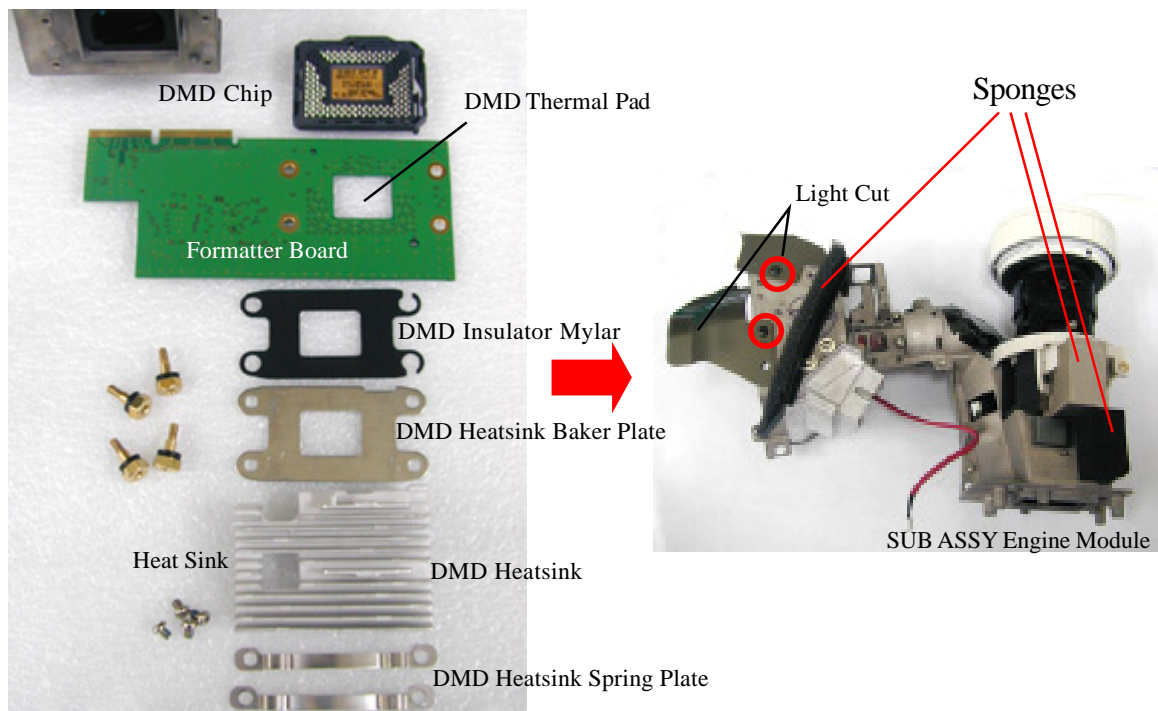
MB Bracket

2-6 Disassemble Engine Module

1. Unscrew 4 screws to remove HeatSink from Engine Module.



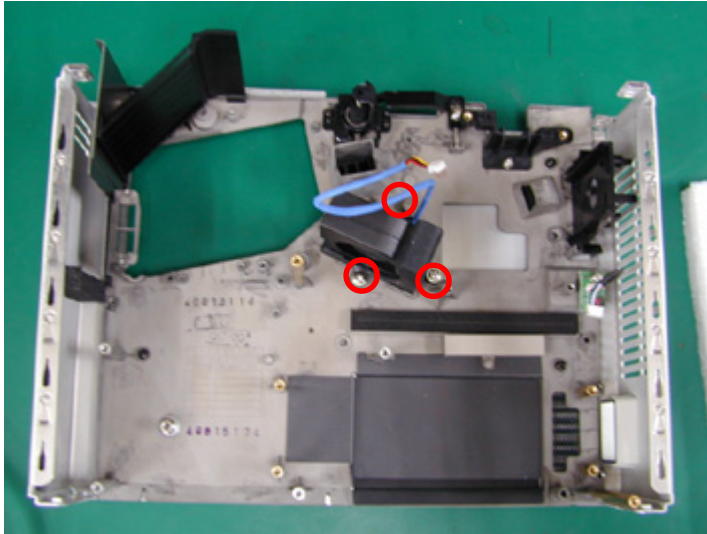
2. Unscrew 4 screws to remove Formatter Board and DMD Chip from Engine Module.
3. Unscrew 2 screws to remove Light Cut.



Notice : Don't forget to paste the sponges when you assemble the SUB ASSY Engine Module.

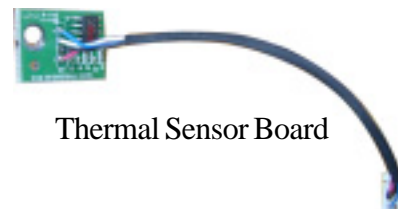
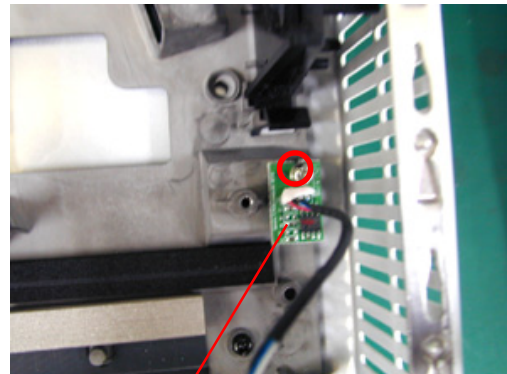
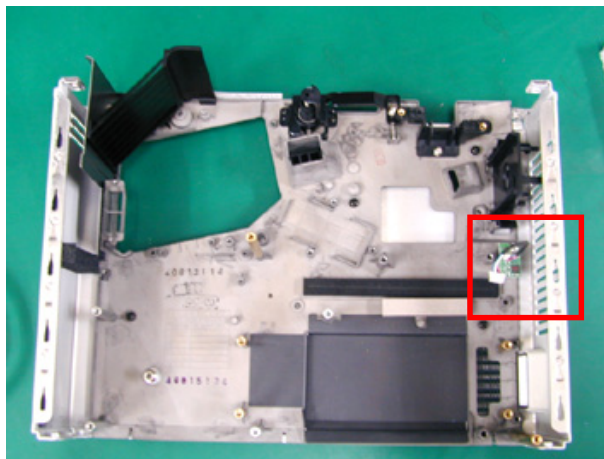
2-7 Removing 50x20 Blower Fan Module, Elevator Module and Thermal Sensor Board

1. Unscrew 3 screws to remove 50x20 Blower Fan Module.



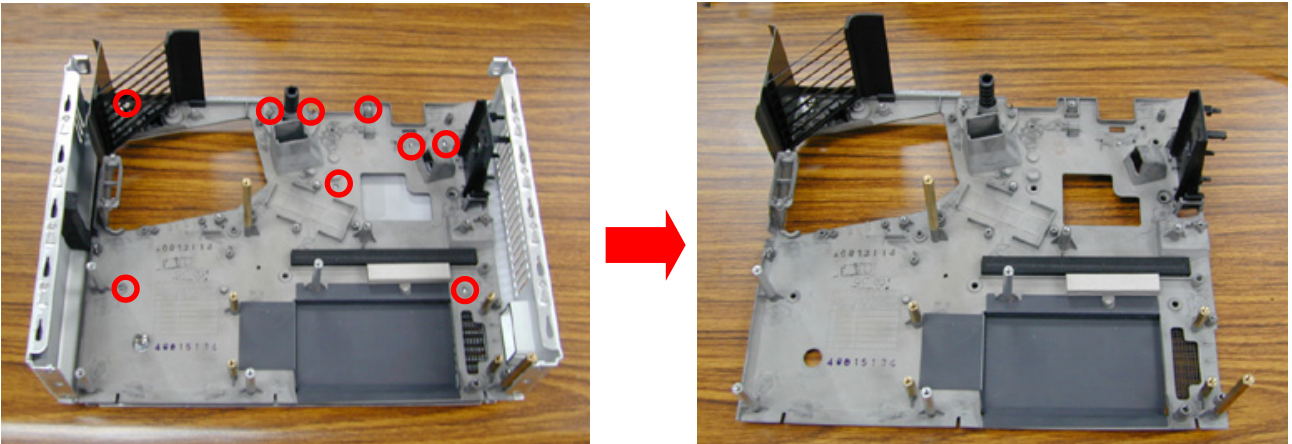
50x20 Blower Fan Module

2. Unscrew one screw to remove Thermal Sensor Board.



Thermal Sensor Board

3. Unscrew 9 screws to remove Bottom Base and Elevator Module.



4. Turn over the Bottom Base and unscrew two screws to remove Elevator Foot.



Troubleshooting

3-1 Equipment Needed

- PC or pattern generator
- DVD player (Video, S-Video, Audio, HDCP/HDMI)
- Quantum Data 802B or CHROMA 2327

3-2 Main Procedure

3-2.1 No Power

- Ensure that the power cord and AC power outlet are securely connected.
- Check Lamp Cover and Interrupt Switch
- Ensure that all connectors are securely connected and haven't broken.
- Check LVPS
- Check Lamp Driver
- Check Main Board

3-2.2 Auto Shutdown

- Check LED indicator **Notice*
 - a. If Lamp LED lit, please check Lamp Module
 - b. If Temp LED lit, please check Thermal Sensor Board
 - c. If Temp LED blinks, please check Fan Module
 - d. If Power LED off, please check LVPS
- Check Main Board
- Check Lamp Driver

3-2.3 No Image

- Ensure that the signal cables and source are work as well. (If you connect multiple sources at the same time, use the "Source" button on the control panel to switch.)
- Ensure that all connectors are securely connected and haven't broken.
- Check Main Board
- Check DMD Board
- Check Color Wheel

- Check DMD Chip
- Check Engine Module

3-2.4 No Light on

- Ensure that all connectors are securely connected and haven't broken.
- Check Lamp Module
- Check LVPS
- Check Lamp Driver
- Check Main Board

3-2.5 Mechanical Noise

- Check Color Wheel
- Check Fan Module
- Check LVPS
- Check Lamp Driver
- Check Engine Module

3-2.6 Line Bar/Line Defect

- Sometimes it's because of DMD chip and DMD board did not assemble properly
- Check DMD Board
- Check DMD Chip
- Check Main Board

3-2.7 Image Flicker

- Do "Factory Reset" of the engineering mode.
- Ensure that the signal cables and source are work as well.
- Check Lamp Module
- Check Color Wheel
- Check DMD Board
- Check Main Board

3-2.8 Color Abnormal

- Check "Color Setting" of the engineering mode.
(including ADC calibration and Color Wheel index)
- Check Main Board
- Check DMD Board
- Check Color Wheel

3-2.9 Poor Uniformity/Shadow

- Ensure the projection screen without dirty
- Ensure the projection lens is clean
- Ensure the Brightness is within spec.
 - a. Replace the Lamp if the Brightness is less than spec.
- Check Engine Module

3-2.10 Dead Pixel/Dust (Out of spec.)

- Ensure the projection screen without dirty
- Ensure the projection lens is clean
- Clean DMD Chip and Engine Module
- Check DMD Chip
- Check Engine Module

3-2.11 Screen Size Abnormal

- Do “Factory Reset” of the engineering mode.
- Adjust “Aspect Ratio”
- Check Main Board

3-2.12 Garbage Image

- Ensure that the signal cables and source are work as well.
- Check Main Board
- Check DMD Board

3-2.13 Remote Mouse Abnormal

- Check PC/Laptop (Hardware setting)
- Check battery
- Check Remote Controller
- Check IR Receiver Board
- Check Main Board

3-2.14 OSD Problem

- Remote Controller and Control Panel Both Failed
 - a. Check Main Board
- Remote Controller Failed
 - a. Check battery
 - b. Check Remote Controller

- c. Check IR Receiver Board
 - d. Check Main Board
- Control Panel Failed
 - a. Check Cable FFC
 - b. Check Keypad Board
 - c. Check Main Board
- FunctionAbnormal
 - a. Do “Factory Reset” of the engineering mode
 - b. Do Firmware Upgrade
 - c. Check Main Board
 - d. Check DMD Board

3-2.15 Firmware/EDID Upgrade Failed

- Check hardware setting
 - Firmware hardware setting (please refer to pages 5-1 and 5-2)
 - EDID hardware setting (please refer to pages 6-1 and 6-2)
- Check PC/Laptop setting
- Check PC/Laptop OS system
- Check program
- Re-boot PC/Laptop
- Check Main Board

3-2.16 Other Input Signal Problem

- Video/S-Video No Image, Image Noise or Line Defect (DVI input OK)
 - a. Check Main Board
- DVINo Image (Video/S-Video input OK)
 - a. Check Main Board
- DVI Image Noise/Ripple (Video/S-Video input OK)
 - a. Adjust “Tracking” function
 - b. Change resolution/refresh rate
 - c. Check Main Board
- DVI Line Defect (Video/S-Video input OK)
 - a. Check Main Board
- DVI input with poor quality of text
 - a. Check resolution
 - b. Check Main Board

* Notice :

LED Status	Meaning	Operation
Temp + Lamp	Projector is check if need to AUTO BURN-IN	Power cord plugged
Temp + Lamp (Lasting over 4 sec)	Projector is in AUTO BURN-IN delay procedure , it takes 90 ~ 590 sec randomly	Power cord plugged
Power (Blink)	Standby mode	Power cord plugged
Power	BURN-IN delay times up and continue BURN-IN procedure	Power cord plugged
Power	Normal operation	Power button pressed
Temp	Projector overheated	
Temp (Blink)	Fan lock	
Lamp	Lamp fail	
Power	Cooling stage 1 (Not interruptible) (Fan blows)	Normal turn off
Power (Blink)	Cooling stage 2 (Can accept POWER button) (Fan blows lasting about 60 sec)	Normal turn off
Power + Temp + Lamp	BURN-IN delay stage 1 (Not interruptible) (Fan blows)	BURN-IN
Temp / Lamp (blink interlaced)	BURN-IN delay stage 2 (Can accept POWER button) (Fan blows lasting about 70 sec)	BURN-IN

Function Test and Alignment Procedure

4-1 Product

- H27

4-2 Test Equipment

- IBM PC with WVGA resolution (Color Video Signal & Pattern Generator)
- DVD player with component video (Y, Pb, Pr) and Multi-system (NTSC/PAL/SECAM)
- HDTV Tuner or Source (480i/p, 576i/p, 720p, 1080i)
- Minolta CL-100
- CHROMA 2316, Quantum Data 802B or CHROMA2327

4-3 Test Condition

- Circumstance Brightness : Dark room less than 2.5 lux.
- Inspection Distance : 1.5m~3m for functional inspection
- Screen Size : 60 inches diagonal (wide)
- After repairing each H27, the unit should be burn-in for at least 4 hours.

Notice : Set H27 in Burn-in Mode

Press “Power”, “◀”, “◀”, “Menu” to enter the engineering mode.

Choose “Burn in test”, and then set “Lamp on (min.)” to 240,

“Lamp off (min.)” >0 and “Set burn in cycle” to 1.

4-4 Test Display Modes & Pattern

4-4.1 Compatible Modes (Analog and DVI)

Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]
VGA	640 x 350	70	31.5
	640 x 350	85	37.9
	640 x 400	85	37.9
	640 x 480	60	31.5
	640 x 480	72	37.9
	640 x 480	75	37.5
	640 x 480	85	43.3
	720 x 400	70	31.5
	720 x 400	85	37.9
WVGA	854 x 480	60	32.2
SVGA	800 x 600	56	35.2
	800 x 600	60	37.9
	800 x 600	72	48.1
	800 x 600	75	46.9
	800 x 600	85	53.7
XGA	1024 x 768	60	48.4
	1024 x 768	70	56.5
	1024 x 768	75	60.0
	1024 x 768	85	68.7
SXGA	1152 x 864	70	63.8
	1280 x 1024	60	63.98
MAC 16"	832 x 624	74.55	49.725
MAC 19"	1024 x 768	75	60.24
MAC	1152 x 870	75.06	68.68
MAC G4	640 x 480	60	31.35
i Mac DV	1024 x 768	75	60
i Mac DV	1152 x 870	75	68.49

4-4.2 Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise by Rsync, Frequency or Tracking selection.	Figure 1
2	Contrast/Brightness	16 Gray Scale / 64 RGBW scale	Gray level should be distinguishable and without color abnormal.	Figure 2,3
3	R, G, B and White Color Performance	R, G, B and White Color	Each R, G, B color should be normal without color abnormal issue.	Figure 4~7
4	Screen Uniformity	Full White	Should be compliant with 65%.(Minimum)	Figure 7
5	Dead Pixel (Bright pixel)	Full Black	Cannot accept any bright pixel	Figure 8
	Dead Pixel (Dark pixel)	Full White	The numbers of dead pixel should be smaller or amount to 6 pixel.	Figure 7
6	Blemish (Bright)	Full Black / Gray 30	The bright blemish cannot be accept if the problem appear with Gary 30 pattern.	Figure 8, 9
7	Blemish (Dark)	Full white / Blue 60	The dark blemish cannot be accept if the problem appear with Blue 60 pattern.	Figure 7,10
8	Focus	Text Pattern	The text in the corner should be clear after adjust the focus ring.	Figure 11
9	Boundary	Boundary Frame	Horz. And Vert. position of video should be adjustable to be the screen frame.	Figure 12
10	Light Leak	Gray 10	The unit can't accept the leakage is brighter than Gray 10 pattern	Figure 13

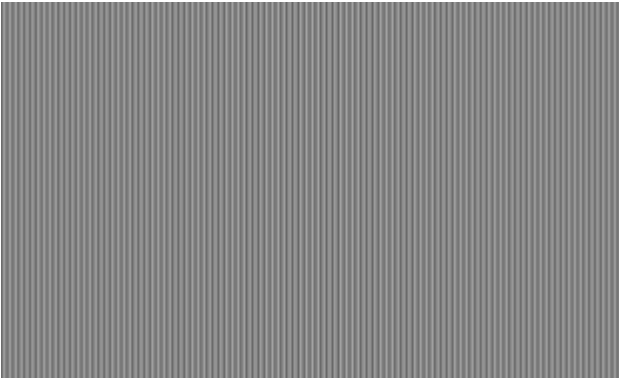


Figure 1. Fine Line Moire

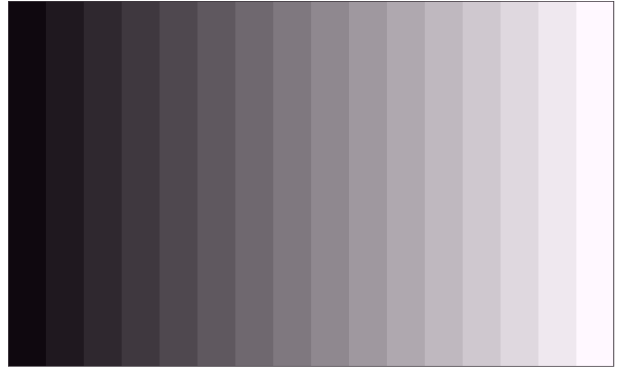


Figure 2. 16 Gray Scale

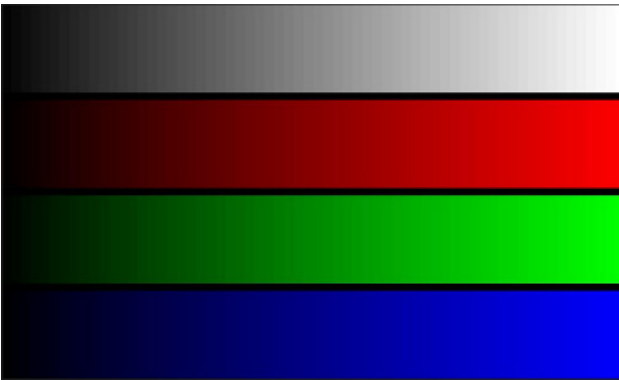


Figure 3. 64 RGBW Scale



Figure 4. Red Pattern



Figure 5. Green Pattern



Figure 6. Blue Pattern

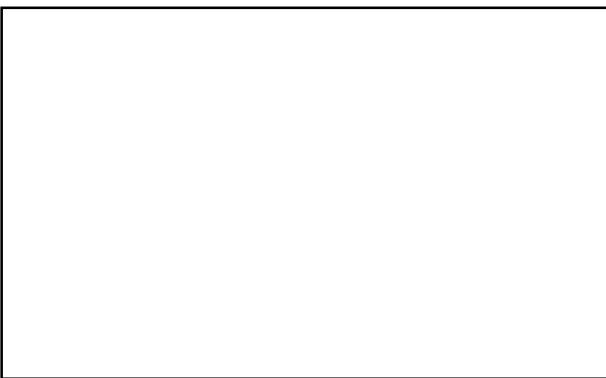


Figure 7. Full White

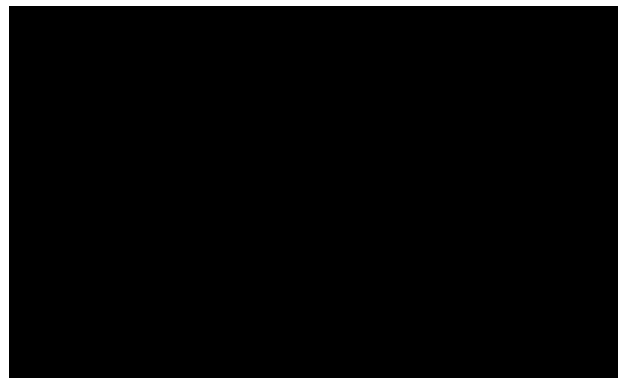


Figure 8. Full Black



Figure 9. Gary 30 Pattern



Figure 10. Blue 60 Pattern

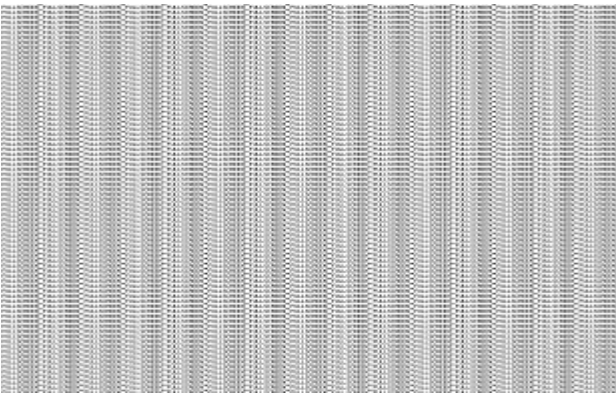


Figure 11. Text Pattern

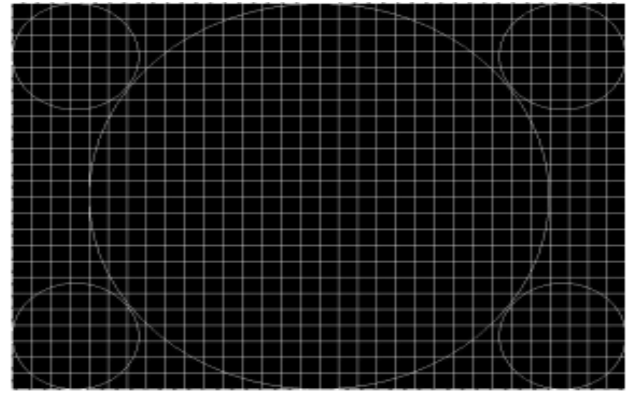


Figure 12. Boundary Frame



Figure 13. Gary 10 Pattern

4-5 Inspection Procedure

- **Factory Reset**

Please press “Power”, “◀”, “◀”, “Menu” on the projector control panel to enter the engineering mode, and then choose “Factory Reset” then choose “YES” and press enter to see if it works.

This action will allow you to erase all end-user’s settings and restore the original setting.

- **Firmware Version**

Test Signal : None

Test Pattern : Service Mode

* Check and see if the firmware version is suited to the projector.

- **Frequency and Tracking**

Test Signal : 854x480@60Hz

Test Pattern : Line Moire Pattern

* Check and see if image sharpness and focus is well performed.

* If not, readjust by following steps.

- (1) Select “Frequency” function to adjust the total pixel number of pixel clock in one line period.
- (2) Then select “Tracking” function and use right or left arrow key to adjust the value to minimize video flicker.

- **Boundary**

Test Signal : 854x480@60Hz

Test Pattern : Boundary Frame

* Adjust Resync or Frequency/Tracking/H. Position/V. Position to the inner of the screen.

- **Focus**

Test Signal : 854x480@60Hz

Test Pattern : Text Pattern

* Adjust the center clearly, meanwhile, one slightly vague corner in the image is allowed

- **HDTV**

Equipment : Quantum Data 802B or CHROMA 2327

Test Signal : 576P, 720P, 1080i

Test Pattern : Master

If the test result was discoloration or flickering, please adjust Video Calibration first.

Notice : (1) Please ignore the image flickering under 480P signal.

(2) Video Calibration :

Test Signal : 480P

Test Pattern : SMPTE Bar

- Enter the engineering mode and choose “Color setting”
- Choose “Reset offset”

- Connect the signal
- Choose “Video Calibration” function
- **Color Performance and Contrast**
 Test Signal : 854x480@60Hz
 Test Pattern : 64 RGBW scale Pattern and Gray 16 Pattern
 - * Please check and ensure if each color is normal and distinguishable
 - * If not, please return the unit to repair area.
- **Screen Uniformity**
 Test Signal : 854x480@60Hz
 Test Pattern : Full White Pattern
 - * Please check and ensure the unit is under the spec. (Pixel number should be smaller or amount to 6 pixels.)
 - * Please check and see if it’s in normal condition.
 - * If not, please return the unit to repair area.
- **Dead Pixel (Bright/Dark pixel)**
 Test Signal : 854x480@60Hz
 Test Pattern : Full Black Pattern and Full White Pattern
 - * Please check and see if there are dead pixels on DMD chip
 - * The total numbers and distance of dead pixels should be complaint with the spec.

Notice : (1) BrightPixel:
 Test Pattern : Full Black Pattern

 - Please check and ensure that the unit cannot accept any bright pixel.
 - If not, please return the unit to repair area.

 (2) Dark Pixel :
 Test Pattern : Full White Pattern

 - Please check and ensure that the pixel number should be smaller or amount to 6 pixels
 - If not, please return the unit to repair area.
- **Light Leak**
 Test Signal : 854x480@60Hz
 Test Pattern : Gray 10 Pattern
 - * Please check and see if the light leaks**Notice*
 - * The unit cannot accept the leakage is brighter than Gary 10 pattern

Notice : light leak on reflective edge, eyecatcher, bond wires and exposed metal.
- **ECO Mode**
 Test Signal : 854x480@60Hz
 Test Pattern : Gray Scale Pattern
 - * Press “Menu” and choose “Brite” function
 - * When choose “On”, the screen will become darkness.
 - * When choose “Off”, the screen will resume normally.

- **Remote Controller**

Test Signal : Any

Test Pattern : Any

* Cover Front IR Receiver up first and then test the remote controller.

* Cover Rear IR Receiver up first and then test the remote controller.

- **Projection Mode**

Test Signal : Any

Test Pattern : Any

* Test all projection modes to ensure the displays are normal or not.

- **Aspect Ratio (4:3/16:9/1:1/Letterbox)**

Test Signal : Any

Test Pattern : Any

* Please check and see if it's in normal condition.

* If not, please return the unit to repair area.

- **Check for Secondary Display Modes**

Test Signal :

* 640x350 (70Hz, 31.5KHz/85Hz, 37.9KHz)

* 640x400 (85Hz, 37.9KHz)

* 640x480 (60Hz, 31.5KHz/72Hz, 37.9KHz/75Hz, 37.5KHz/85Hz, 43.3KHz)

* 720x400 (70Hz, 31.5KHz/85Hz, 37.9KHz)

* 800x600 (56Hz, 35.2KHz/60Hz, 37.9KHz/72Hz, 48.1KHz/75Hz, 46.9KHz/85Hz, 53.7KHz)

* 1024x768 (60Hz, 48.4KHz/70Hz, 56.5KHz/75Hz, 60.0KHz/85Hz, 68.7KHz)

* 1152x864 (70Hz, 63.8KHz)

* 1280x1024 (60Hz, 63.98KHz)

* 832x624 (74.55Hz, 49.725KHz)

* 1024x768 (75Hz, 60.24KHz)

* 1152x870 (75.06Hz, 68.68KHz)

* 640x480 (60Hz, 31.35KHz)

* 1024x768 (75Hz, 60KHz)

* 1152x870 (75Hz, 68.49KHz)

Normally when the primary mode 854x480@60Hz is well adjusted and complaint with the specification, then the secondary display modes will be great possibility to be complaint with the specification. But we still have to check with general test pattern to make sure every secondary modes is complaint with specification.

- **Factory Reset**

After final QC step, we have to erase all saved change again and restore the factory defaults. Please press “Power”, “◀”, “◀”, “Menu” on the projector control panel to enter the engineering mode, and then choose “Factory Reset” then choose “YES” and press enter to see if it works.

This action will allow you to erase all end-user’s settings and restore the original setting.

Firmware Upgrade Procedure

5-1 Equipment Needed

Software :

- DLP Composer Lite
- H27.IMG

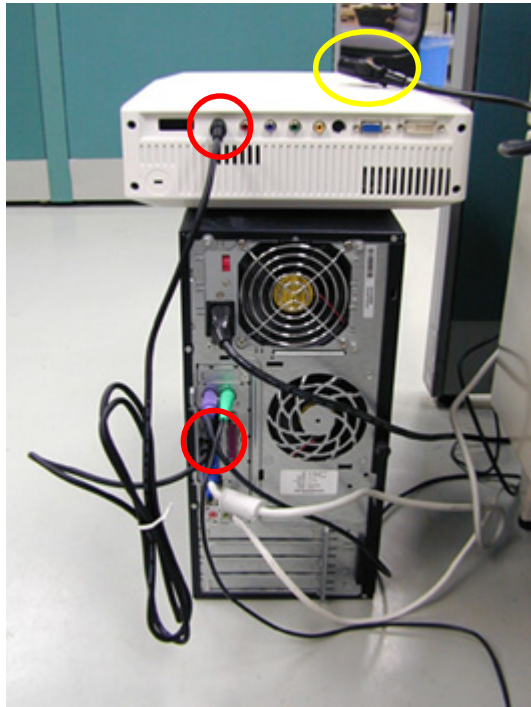
Hardware :

- H27 Projector
- PC or Laptop
- Cable One Mini DIN 3-pin for RS232
- Power Cord

5-2 Hardware Setup Procedure

1. Connecting the RS232 Cable (One Mini DIN 3-pin) between PC/Laptop and H27 projector.

Notice : Do not connect the H27 Power Cord in this procedure.



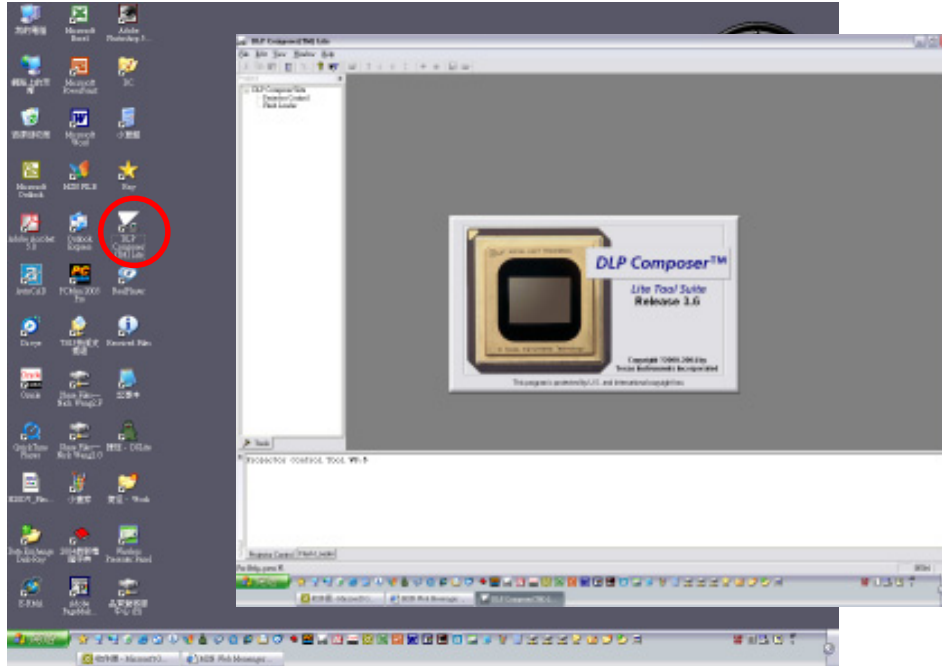
RS232 Cable

5-3 Firmware Upgrade Procedure

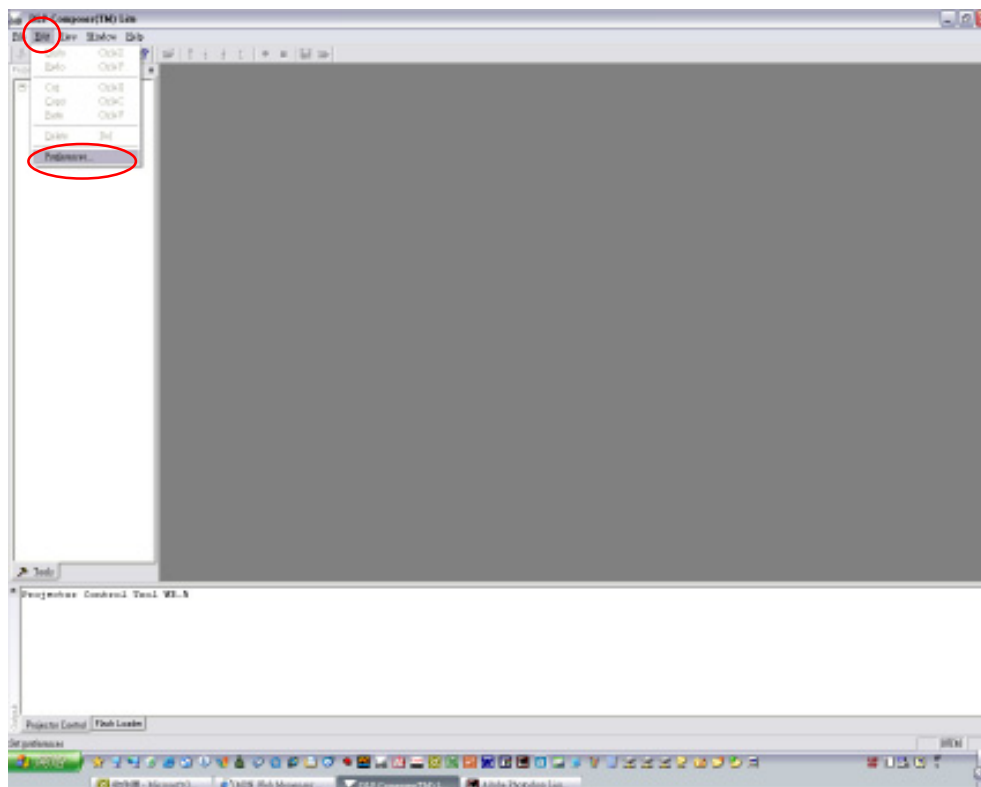
1. Keep pressing "Menu" button and then plug in the H27 power cord until "LAMP", "TEMP" and "POWER" LED turn into the light.

Notice : "LAMP" and "TEMP" LED turn into light first at the same time, and then "POWER" LED turn into the light. (Firmware Upgrade Mode)

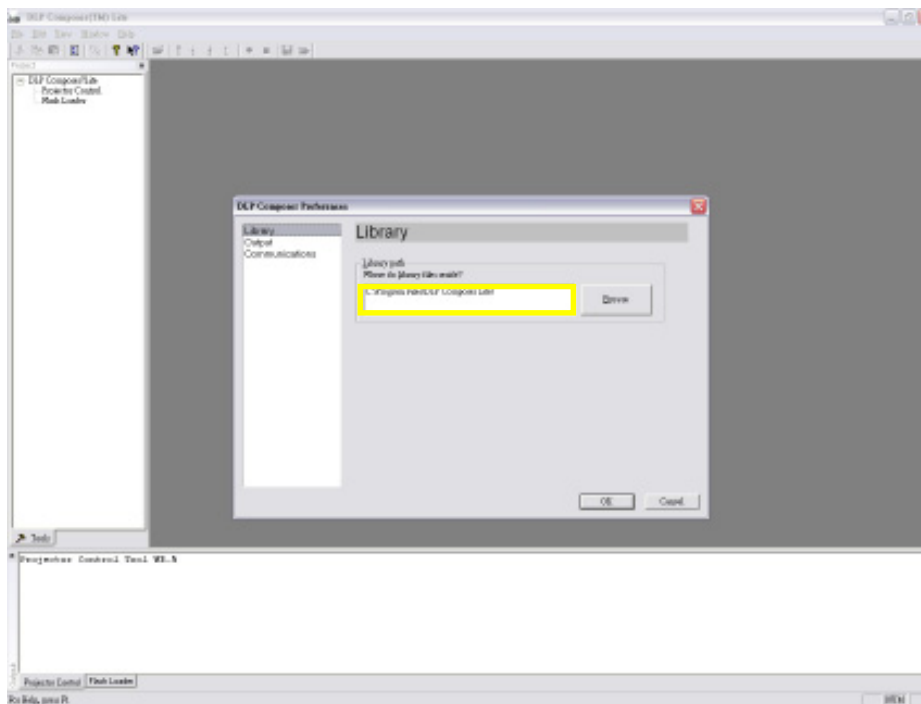
2. Execute the "DLPComposer Lite" program.



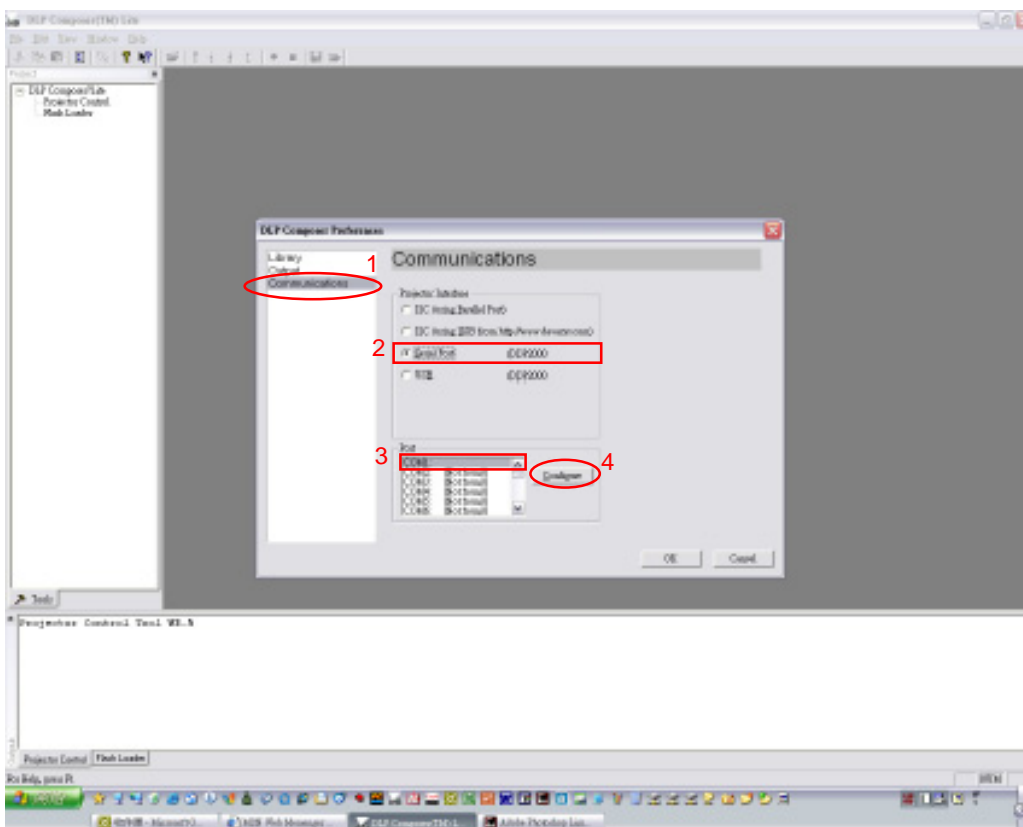
3. Click "Edit" and then "Preferences...".



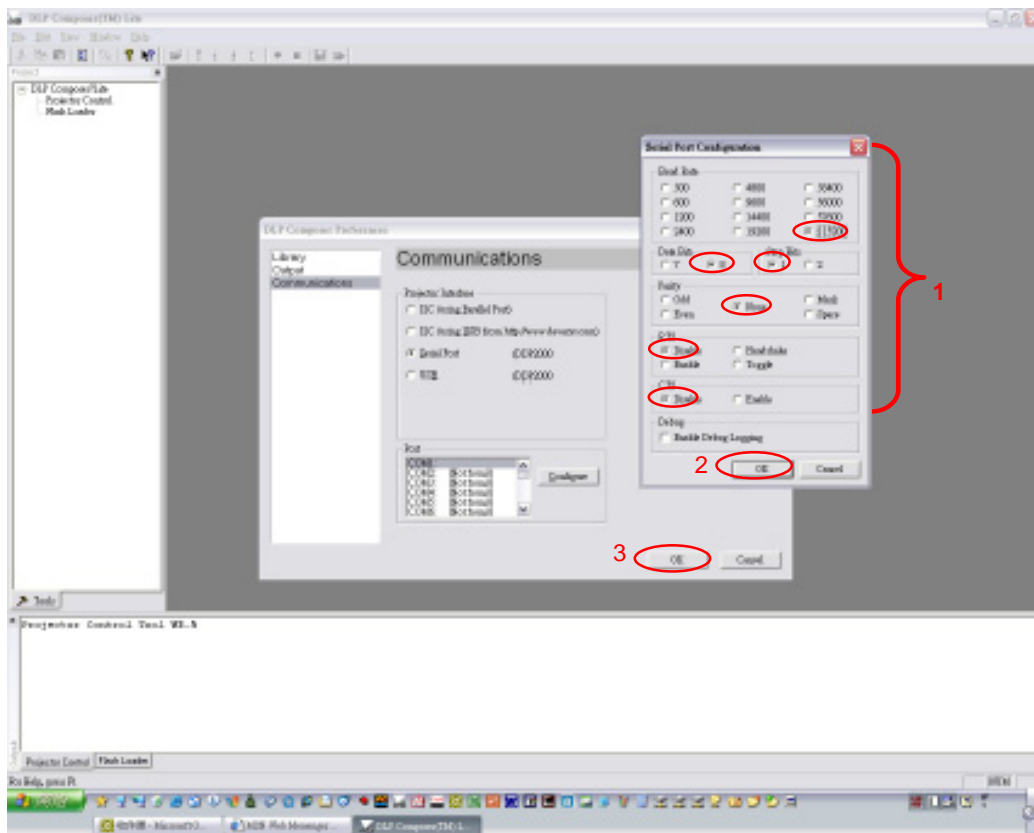
4. Check the path that you installed "DLP Composer Lite" is correct or not.
If the path is wrong, please click "Browse" to select the right path.



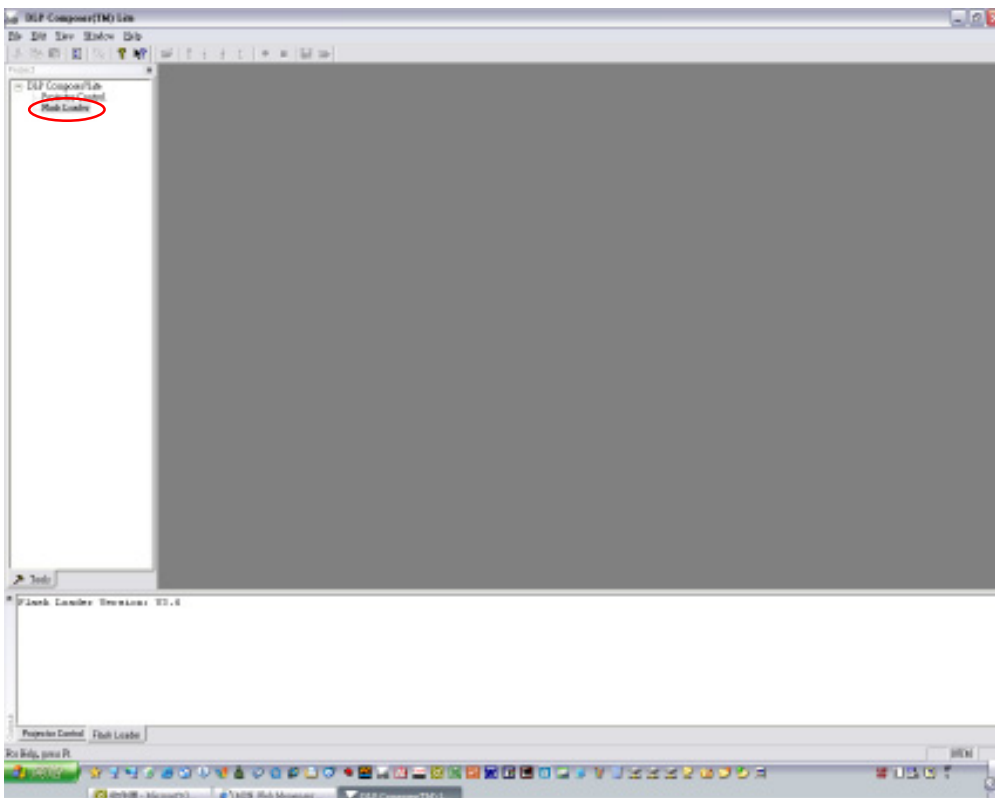
5. Click "Communications"
Choose "Projector Interface" as "Serial Port DDP2000"
Select "COM1" port and then click "Configure"



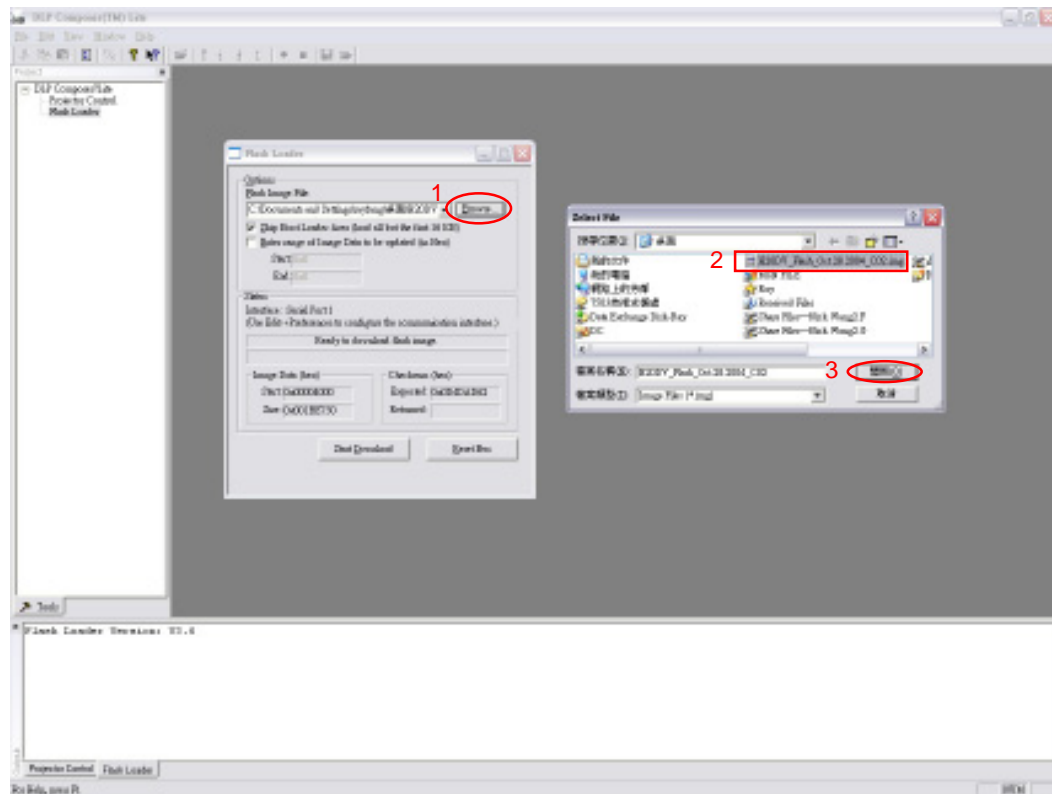
6. Choose "Baud Rate" as "115200", "Data Bits" as "8", "Stop Bits" as "1", "Parity" as "None", "RTS" and "CTS" as "Disable", and then click "OK".
Click "OK" after selecting the right functions in "DLP Composer Preference".



7. Click "Flash Loader"



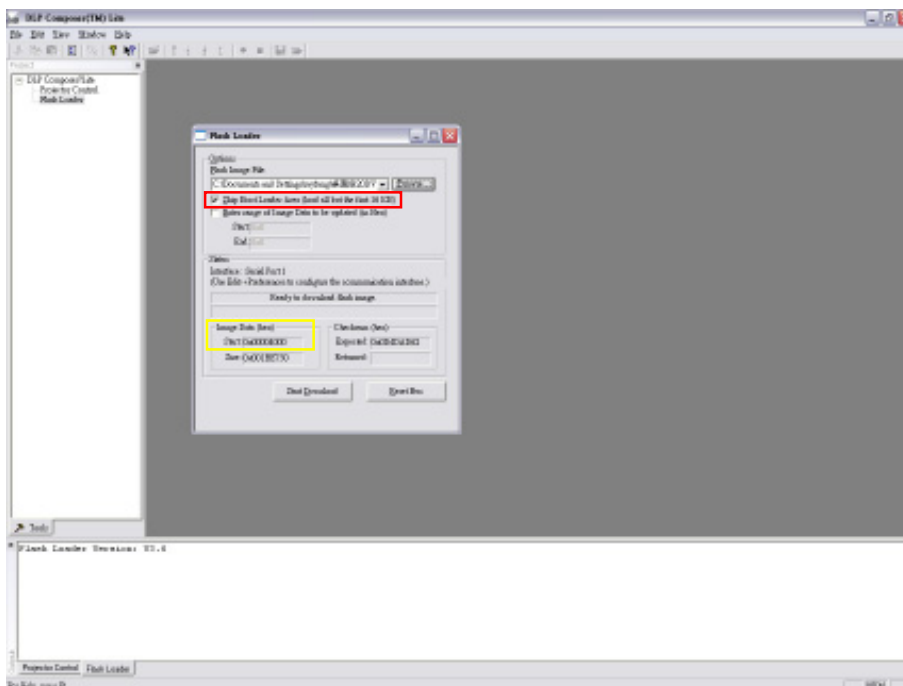
8. Click "Browse" to select the H27.IMG program, and then click "Open".



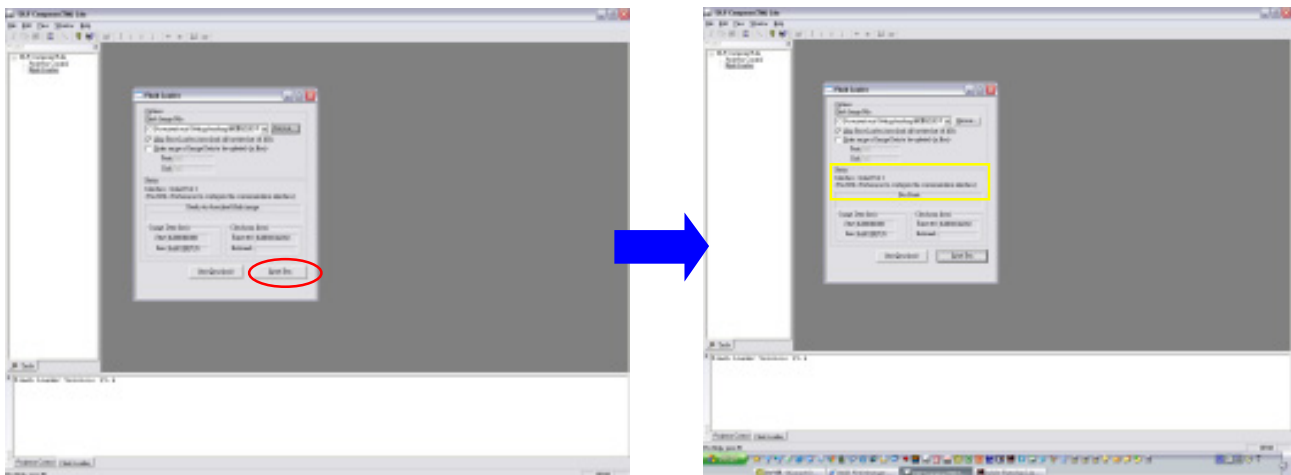
9. Select the item "Skip Boot Loader Area (load all but the first 16KB)".

This could prevent boot code to be damaged if you failed to download firmware.

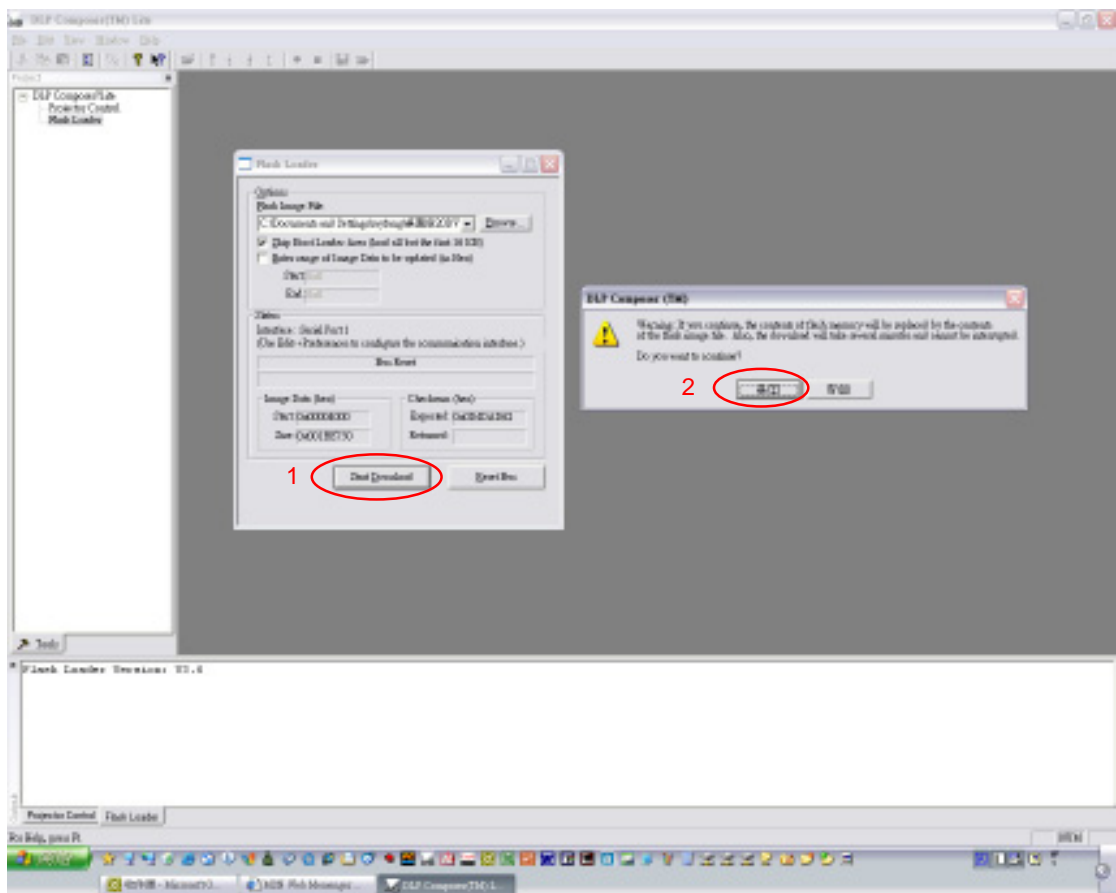
Notice : Please check the "Start" location of "Image Data (hex)" which marked as the yellow field. If the item "Skip Boot Loader Area (load all but the first 16KB)" was not selected, the "Start" location would be "0x00000000".



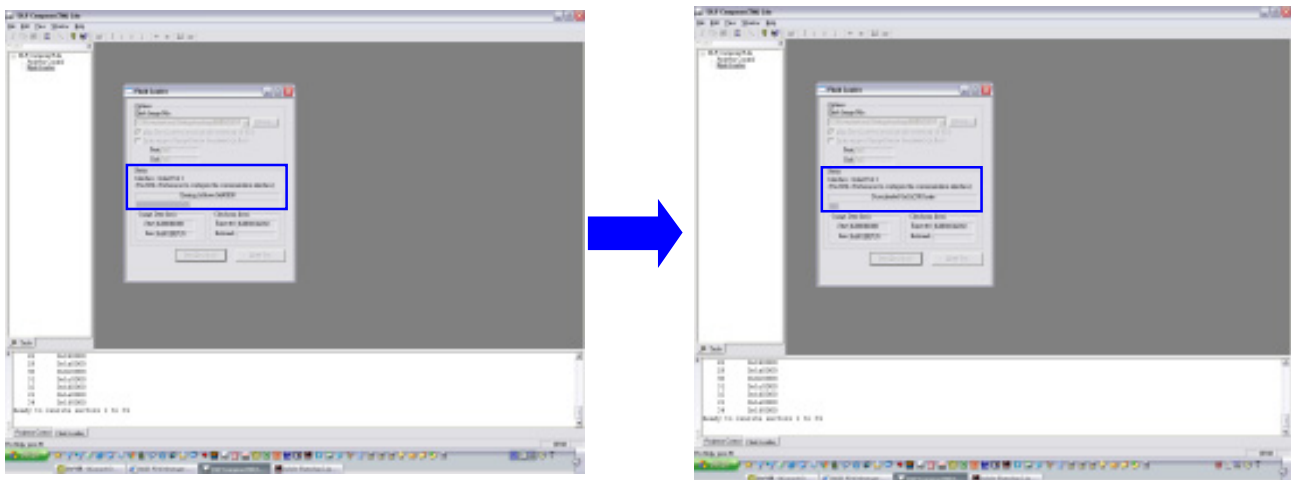
10. Click "Reset Bus" and you will see the status change to "Bus Reset"



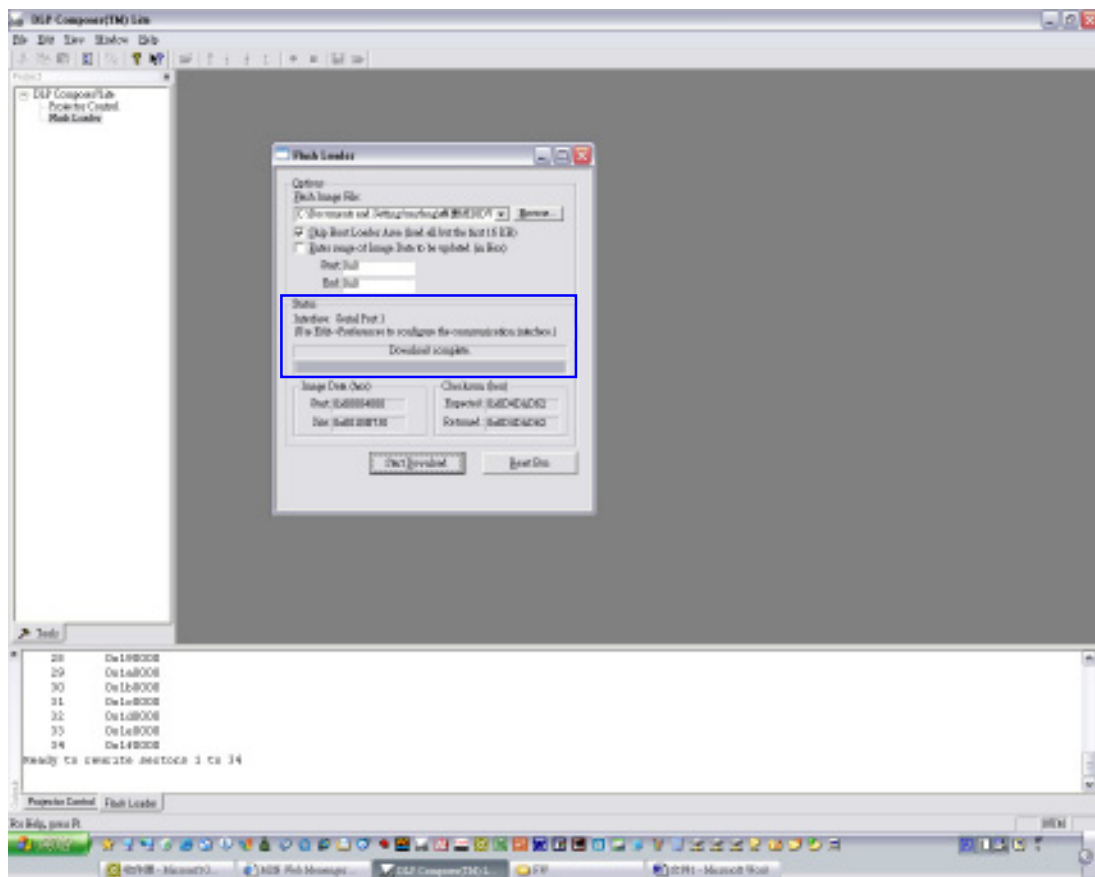
11. Click "StartDownload" and then click "Yes" to continue.



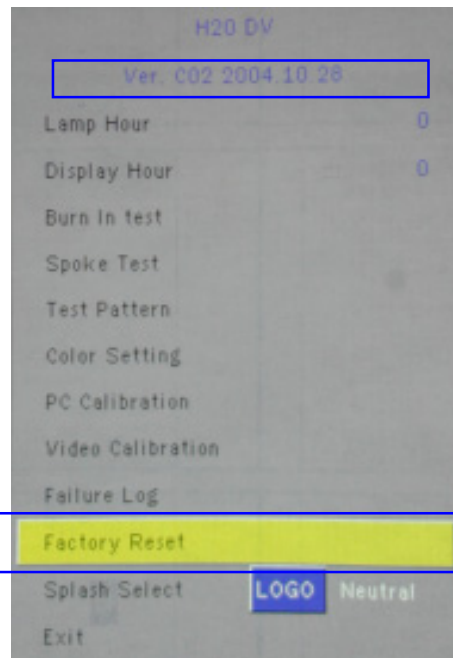
12. You will see the status is erasing elash ROM at first, and then downloading the new firmware. *Notice



13. Download complete.



14. After upgrading the new firmware, please reconnect the H27 power cord and press "POWER" button to turn on the H27 projector.
Press "POWER", "◀", "◀", "MENU" to enter the Engineering Mode.
Check the Firmware version and do "Factory Reset".

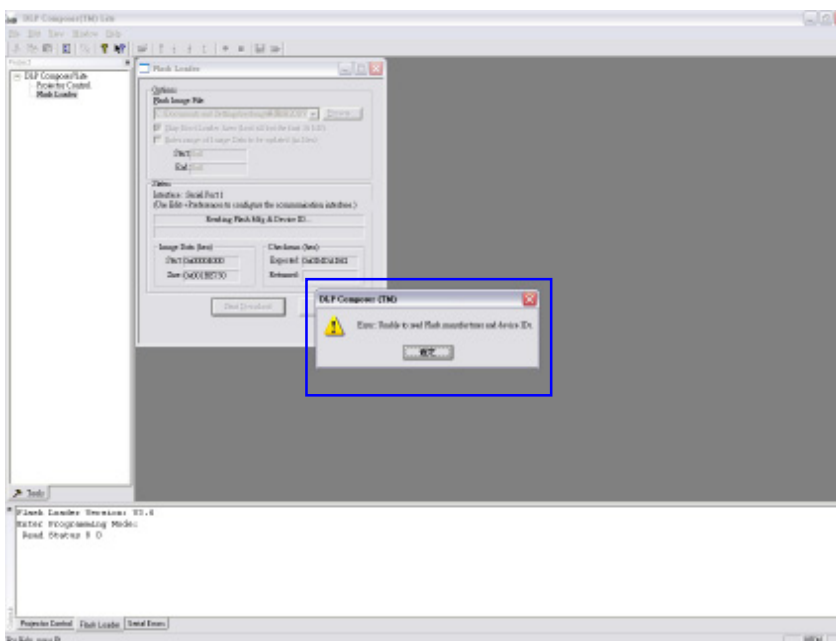


The message shows the firmware version and its released date.

Notice : Download Failed Message

If you failed to download...

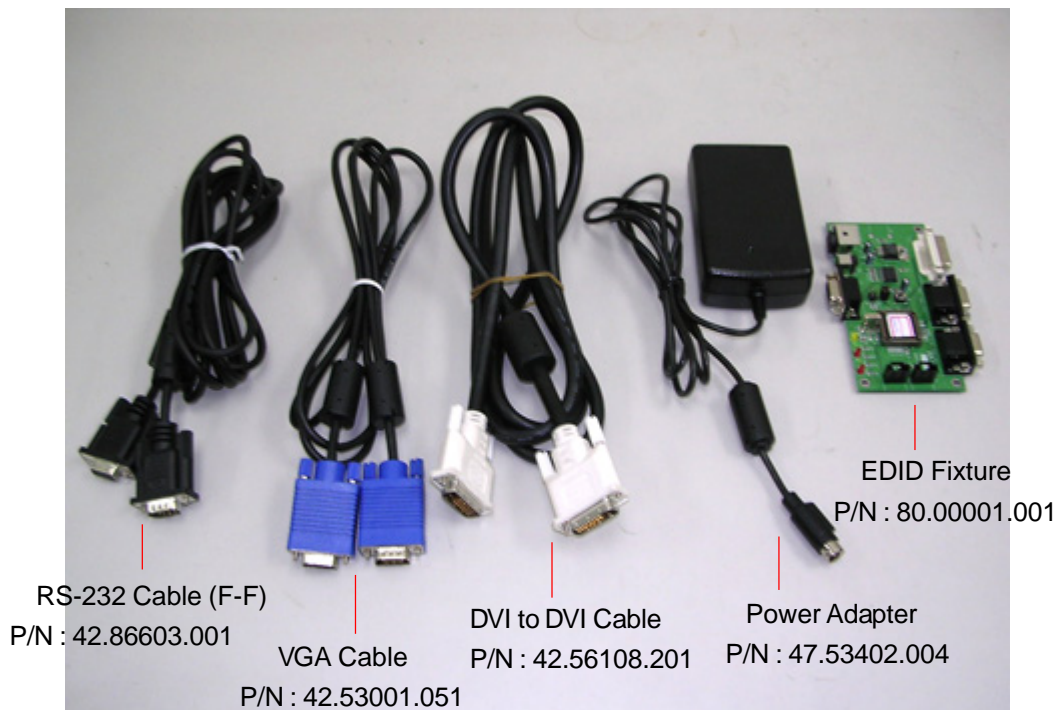
- (1) Repeat the procedures of Step3~13.
- (2) Check if RS232 cable is connected well.
- (3) Disconnect the H27 power cord and then enter the firmware upgrade mode again.
- (4) Restart PC/Laptop and try again.



DDC Key-in Procedure

6-1 Equipment Needed

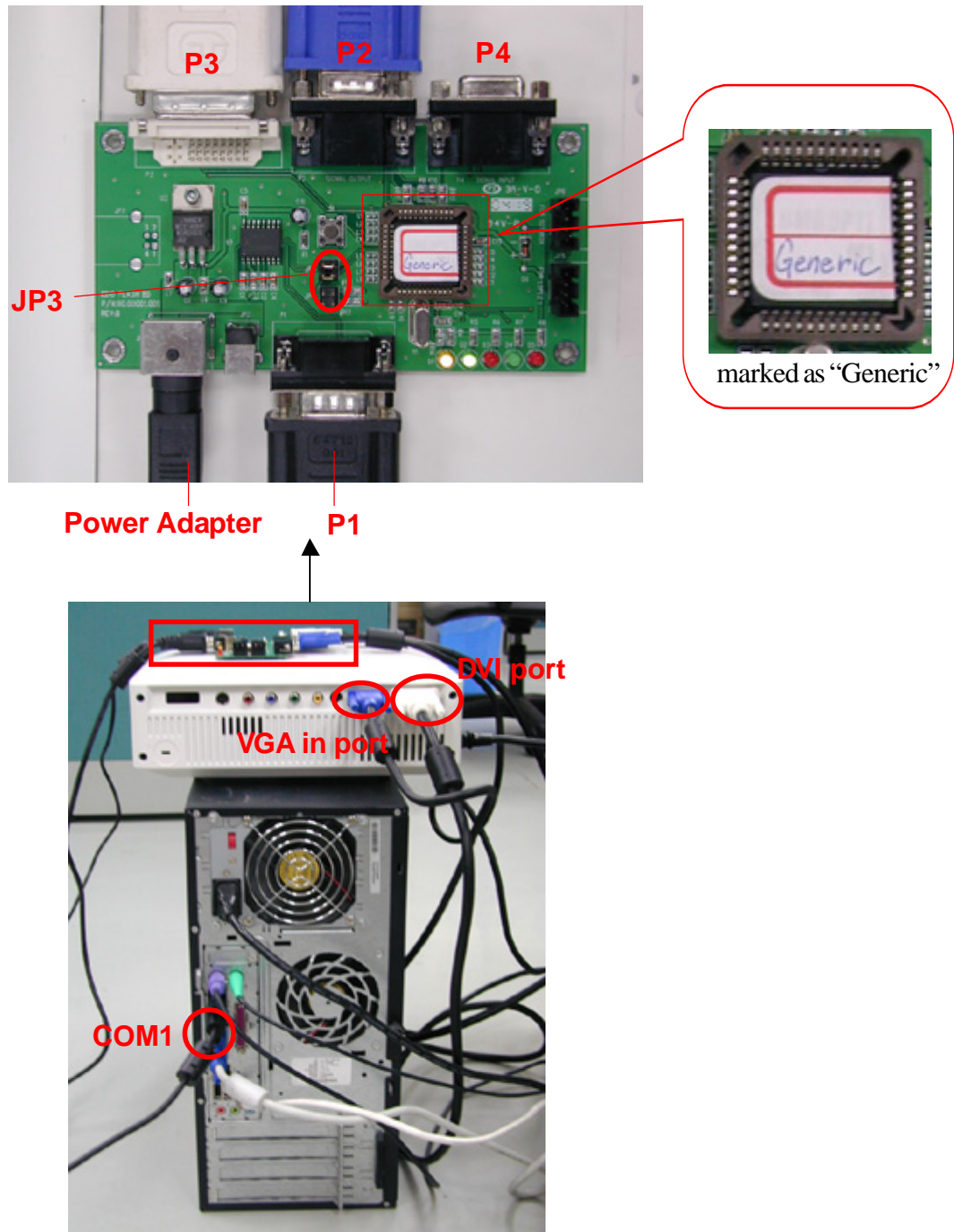
- PC or Laptop
- EDID Fixture
- DVI to DVI Cable
- Power Adapter
- RS-232 Cable (Female to Female)
- VGA Cable
- Power Cord
- DDC Driver
- H27 Unit



6-2 Setup Procedure

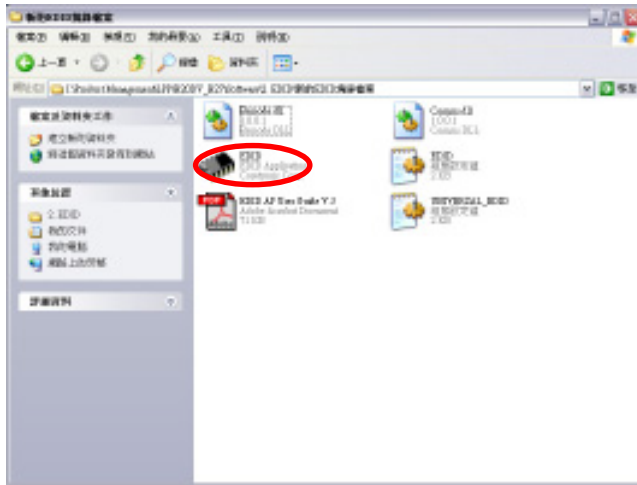
- Step1. Connect Power Adapter with the fixture.
- Step2. Connect P1 of the fixture with COM1 of PC/Laptop by RS232 cable.
- Step3. Connect P2 or P4 of the fixture with VGA in port of H27 cable.
- Step4. Connect P3 of the fixture with DVI port of DVI-DVI cable.
- Step5. Plug Power Adapter to the fixture and connect the H27 Power Cord.

*Notice : Confirm JP3 is “Close” status (EDID Mode).

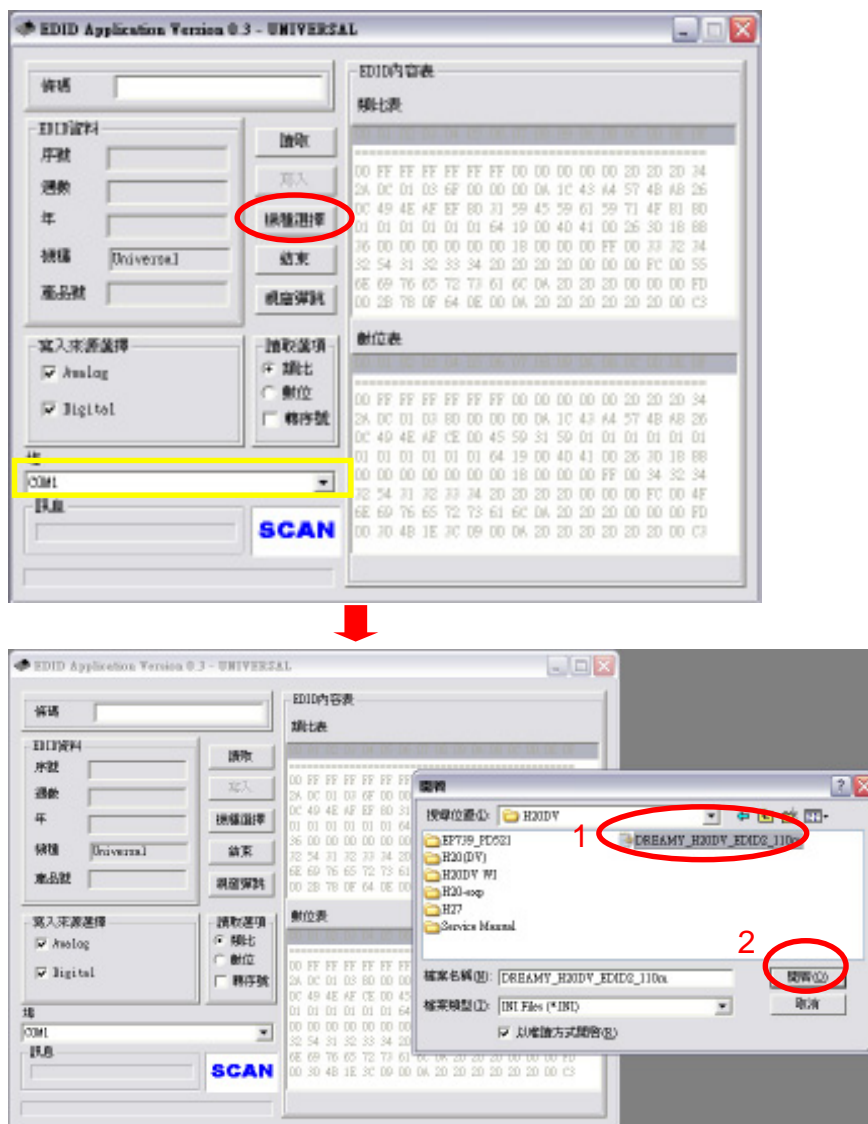


6-3 DDC Key-in Procedure

Step 1. Execute “EDID” program.



Step 2. Check the Com port is “COM1”, then click the “Model” item and choose the source file “DREAMY_H27_EDID2_110m” and then open it.

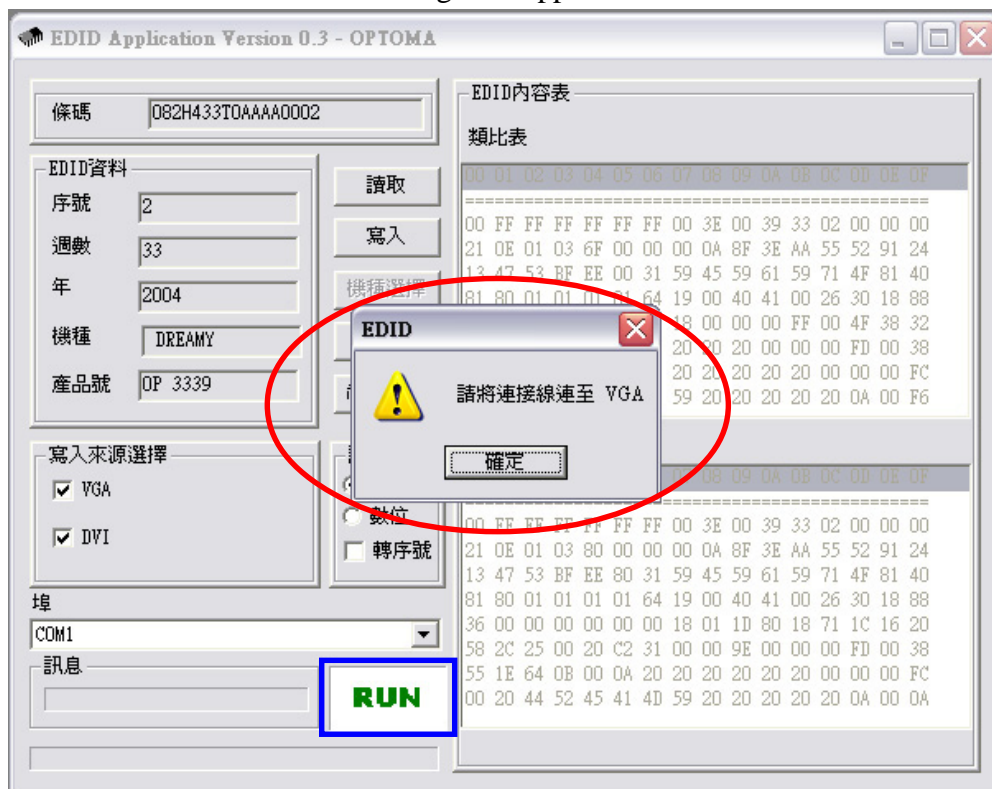


Step 3. Check the Model is “DREAMY” and the Product is “OP 3339”.

Step 4. Key in the Serial Number into the blank space, then click “Write” button.

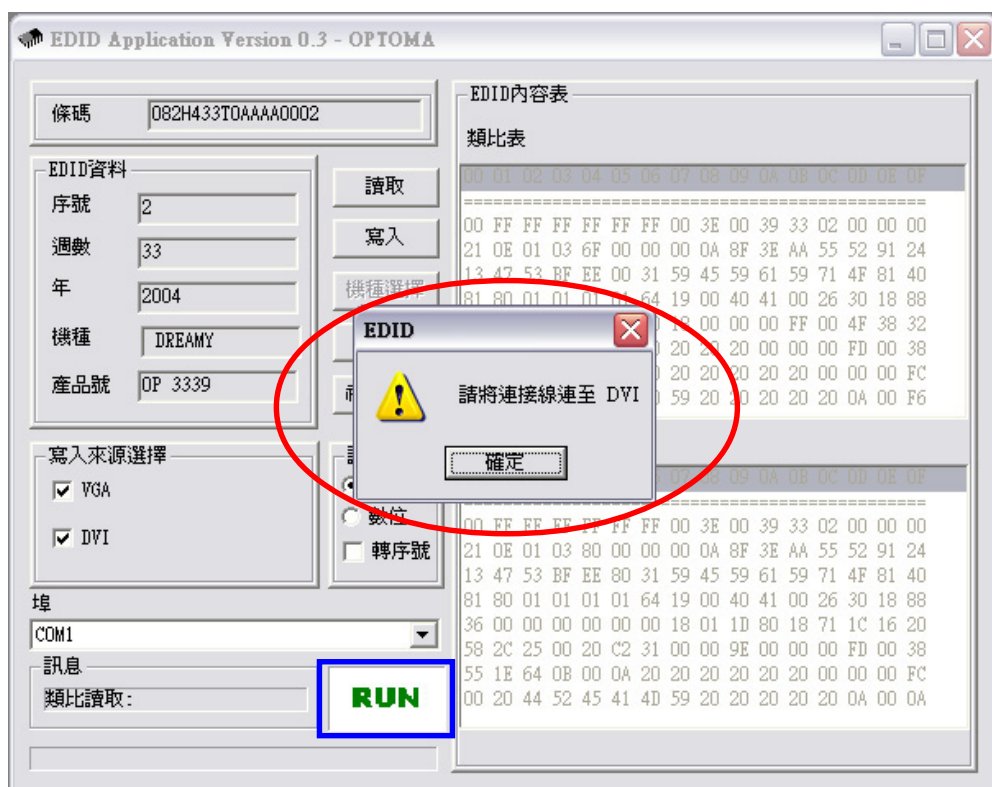
Step 5. “Please connect to VGA” message is shown on the screen, then click “OK” button.

Notice : “RUN” message will appear on the screen.

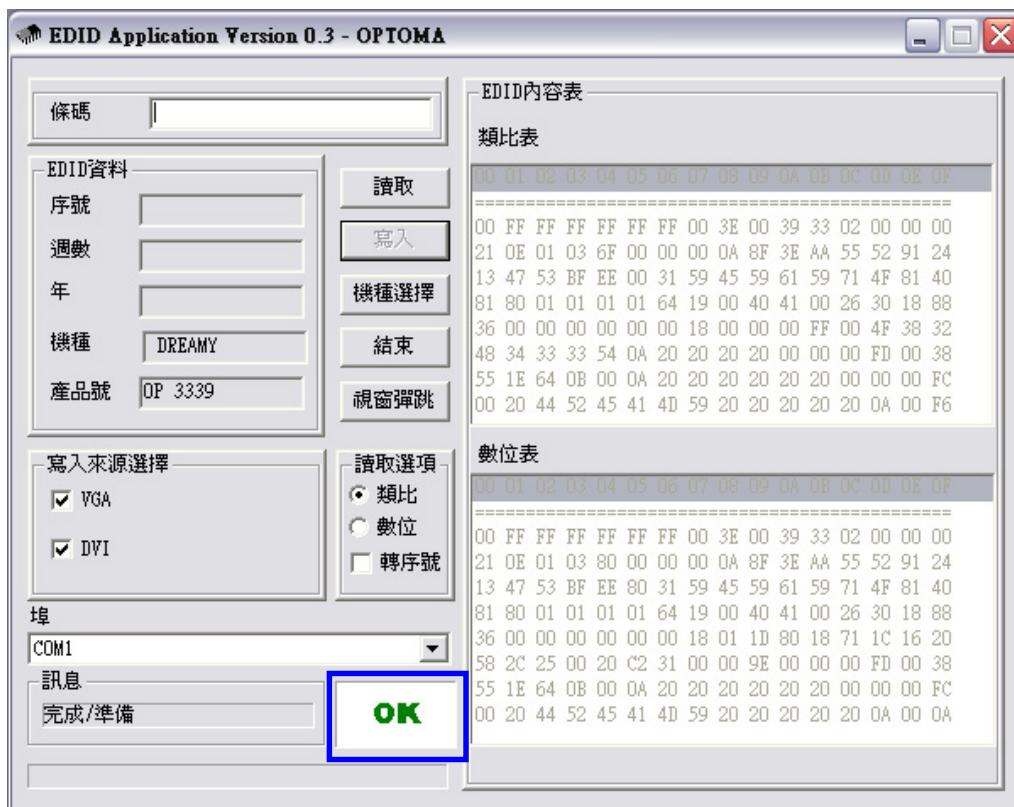


Step 6. “Please connect to DVI” message is shown on the screen, then click “OK” button.

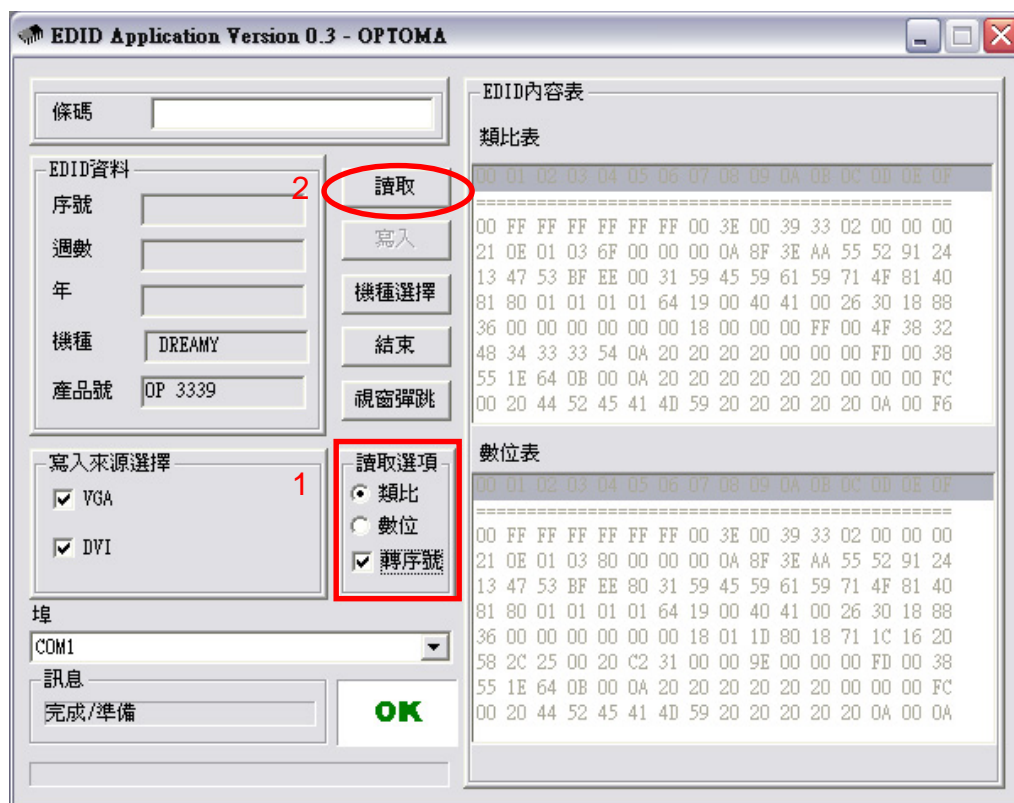
Notice : “RUN” message will appear on the screen.



Step 7. When the H27 EDID program is finish, the “OK” message will appear on the screen.



Step 8. Find **Read function** and choose “Analog” and “Trans” icon, then click “Read” button.



- Step 9. Check **EDID Informations** will show the result and **EDID Values** will show Analog Values, then **Message function** will show “OK” message.

EDID Application Version 0.3 - OPTOMA

條碼

EDID資料

序號 2

週數 33

年 2004

機種 DREAMY

產品號 OP 3339

讀取

寫入

機種選擇

結束

視窗彈跳

寫入來源選擇

☒ VGA

☒ DVI

讀取選項

☒ 類比

☐ 數位

☒ 轉序號

埠

COM1

訊息

完成/準備

OK

EDID內容表

類比表

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	FF	FF	FF	FF	FF	FF	00	3E	00	39	33	02	00	00	00
21	0E	01	03	6F	00	00	00	0A	8F	3E	AA	55	52	91	24
13	47	53	BF	EE	00	31	59	45	59	61	59	71	4F	81	40
81	80	01	01	01	01	64	19	00	40	41	00	26	30	18	88
36	00	00	00	00	00	00	18	00	00	00	FF	00	4F	38	32
48	34	33	33	54	0A	20	20	20	20	00	00	00	FD	00	38
55	1E	64	0B	00	0A	20	20	20	20	20	20	00	00	00	FC
00	20	44	52	45	41	4D	59	20	20	20	20	20	0A	00	F6

數位表

- Step 10. Find **Read function** and choose “Digital” and “Trans” icon, then click “Read” button.

EDID Application Version 0.3 - OPTOMA

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寫入來源選擇

☒ VGA

☒ DVI

讀取選項

☐ 類比

☒ 數位

☒ 轉序號

埠

COM1

訊息

完成/準備

OK

EDID內容表

類比表

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	FF	FF	FF	FF	FF	FF	00	3E	00	39	33	02	00	00	00
21	0E	01	03	6F	00	00	00	0A	8F	3E	AA	55	52	91	24
13	47	53	BF	EE	00	31	59	45	59	61	59	71	4F	81	40
81	80	01	01	01	01	64	19	00	40	41	00	26	30	18	88
36	00	00	00	00	00	00	18	00	00	00	FF	00	4F	38	32
48	34	33	33	54	0A	20	20	20	20	00	00	00	FD	00	38
55	1E	64	0B	00	0A	20	20	20	20	20	20	00	00	00	FC
00	20	44	52	45	41	4D	59	20	20	20	20	20	0A	00	F6

數位表

- Step 11. Check **EDID Informations** will show the result and **EDID Values** will show Digital Values, then **Message function** will show “OK” message.

EDID Application Version 0.3 - OPTOMA

條碼

EDID資料

序號 2

週數 33

年 2004

機種 DREAMY

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☒ VGA

☒ DVI

讀取選項

☐ 類比

☒ 數位

☒ 轉序號

埠

COM1

訊息

完成/準備

OK

EDID內容表

類比表

數位表

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	FF	FF	FF	FF	FF	FF	00	3E	00	39	33	02	00	00	00
21	0E	01	03	80	00	00	00	0A	8F	3E	AA	55	52	91	24
13	47	53	BF	EE	80	31	59	45	59	61	59	71	4F	81	40
81	80	01	01	01	01	64	19	00	40	41	00	26	30	18	88
36	00	00	00	00	00	00	18	01	1D	80	18	71	1C	16	20
58	2C	25	00	20	C2	31	00	00	9E	00	00	00	FD	00	38
55	1E	64	0B	00	0A	20	20	20	20	20	20	00	00	00	FC
00	20	44	52	45	41	4D	59	20	20	20	20	20	0A	00	0A

- Step 12. Click “Exit” button to close the EDID program.

EDID Application Version 0.3 - OPTOMA

條碼

EDID資料

序號 2

週數 33

年 2004

機種 DREAMY

產品號 OP 3339

讀取

寫入

機種選擇

結束

視窗彈跳

寫入來源選擇

☒ VGA

☒ DVI

讀取選項

☐ 類比

☒ 數位

☒ 轉序號

埠

COM1

訊息

完成/準備

OK

EDID內容表

類比表

數位表

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	FF	FF	FF	FF	FF	FF	00	3E	00	39	33	02	00	00	00
21	0E	01	03	80	00	00	00	0A	8F	3E	AA	55	52	91	24
13	47	53	BF	EE	80	31	59	45	59	61	59	71	4F	81	40
81	80	01	01	01	01	64	19	00	40	41	00	26	30	18	88
36	00	00	00	00	00	00	18	01	1D	80	18	71	1C	16	20
58	2C	25	00	20	C2	31	00	00	9E	00	00	00	FD	00	38
55	1E	64	0B	00	0A	20	20	20	20	20	20	00	00	00	FC
00	20	44	52	45	41	4D	59	20	20	20	20	20	0A	00	0A

Appendix A

Serial Number System Definition

Serial Number for Projector

A BBB Y WW C D BEMOEEEE

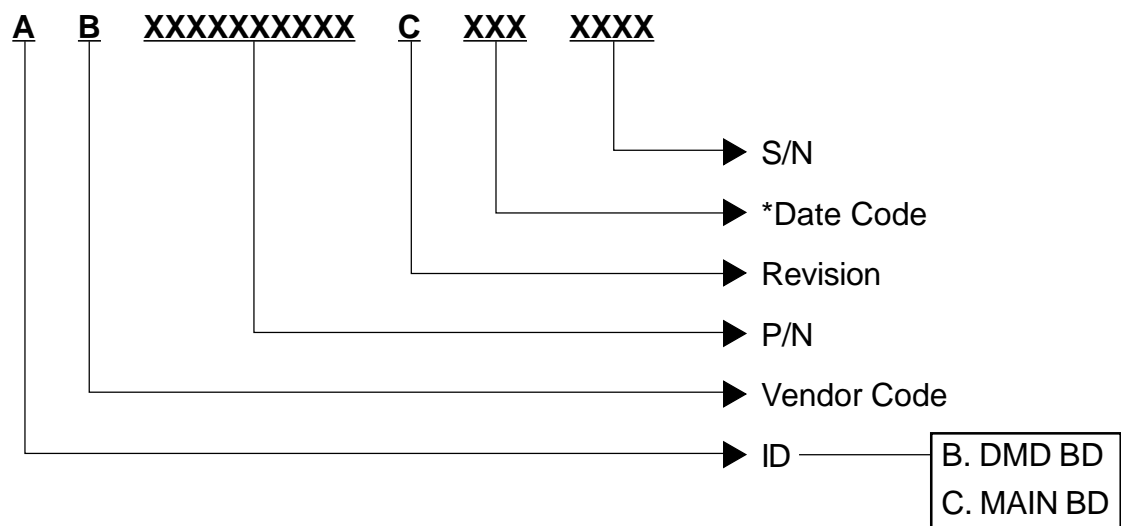
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① : O = Optoma
- ② : Product Code (ex: 82H= H27)
- ③ : Y = Last Number of the Year (ex: 2002 - 2, 2003 - 3)
- ④ : Week of Year
- ⑤ : Panel Vendor Code
- ⑥ : Electrical Classification (1=110V, 2=220V, 0=Universal)
- ⑦ : B = BIOS Version, E = PCB Board Version,
M = Mechanical Version, L = Location of Manufacture
- ⑧ : Serial Code (from 0001~)

EX: O82H433T0AAAA0002

This label “O82H433T0AAAA0002” represents the whole serial number for H27, including Ver. 1st of BIOS and Ver. 1 of PCB Board. Both mechanical and optical version are 1st. In addition, panel vendor is T. It's produced on 33-week of 2004 for universal area and its serial code is 0002.

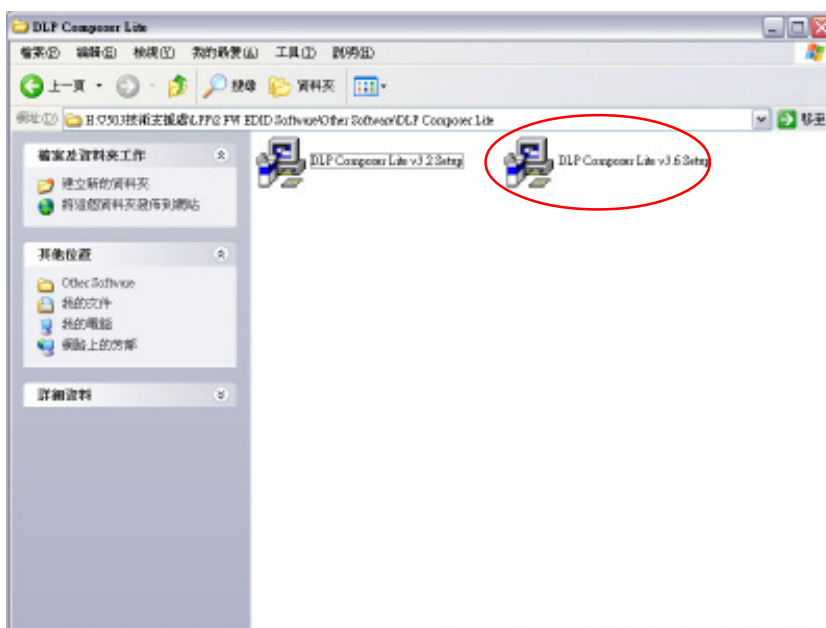
Appendix B Board S/N Coding



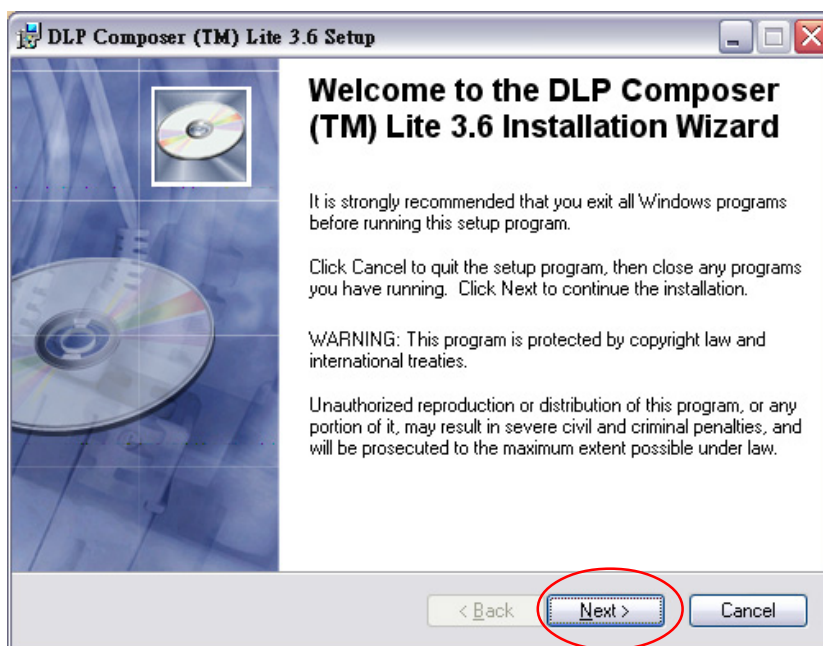
*Date Code : Year(1 digit)+Week(2 digits)

Appendix C DLP Composer Lite Setup Procedure

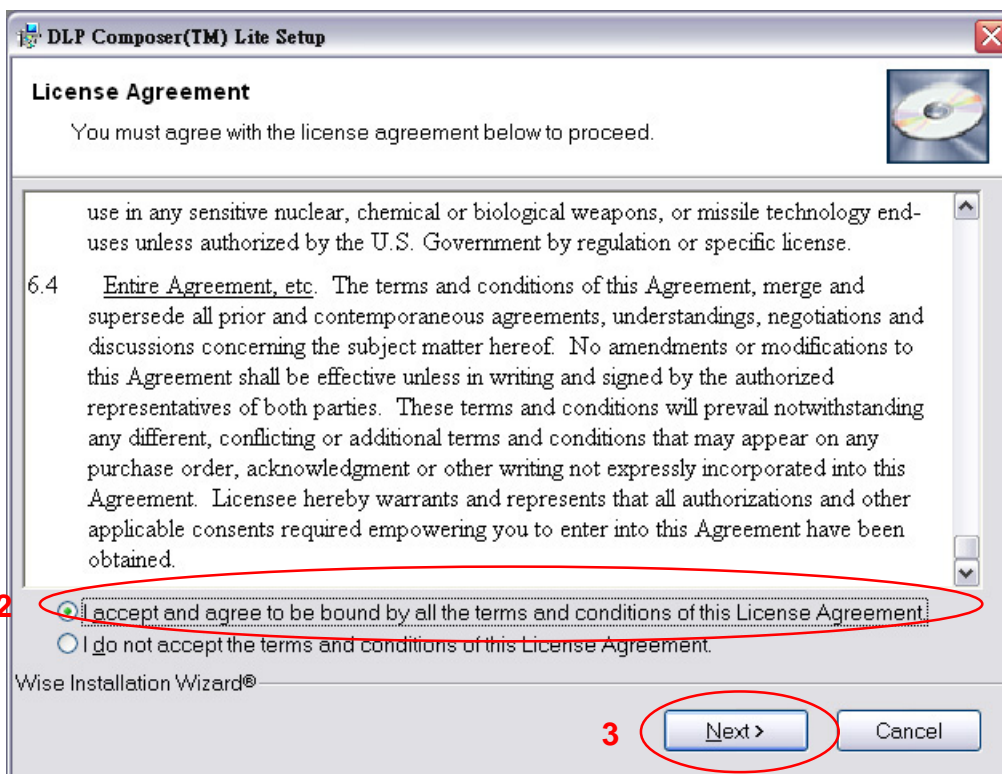
Step 1. Choose “DLP Composer Lite v3.6 Setup” program.



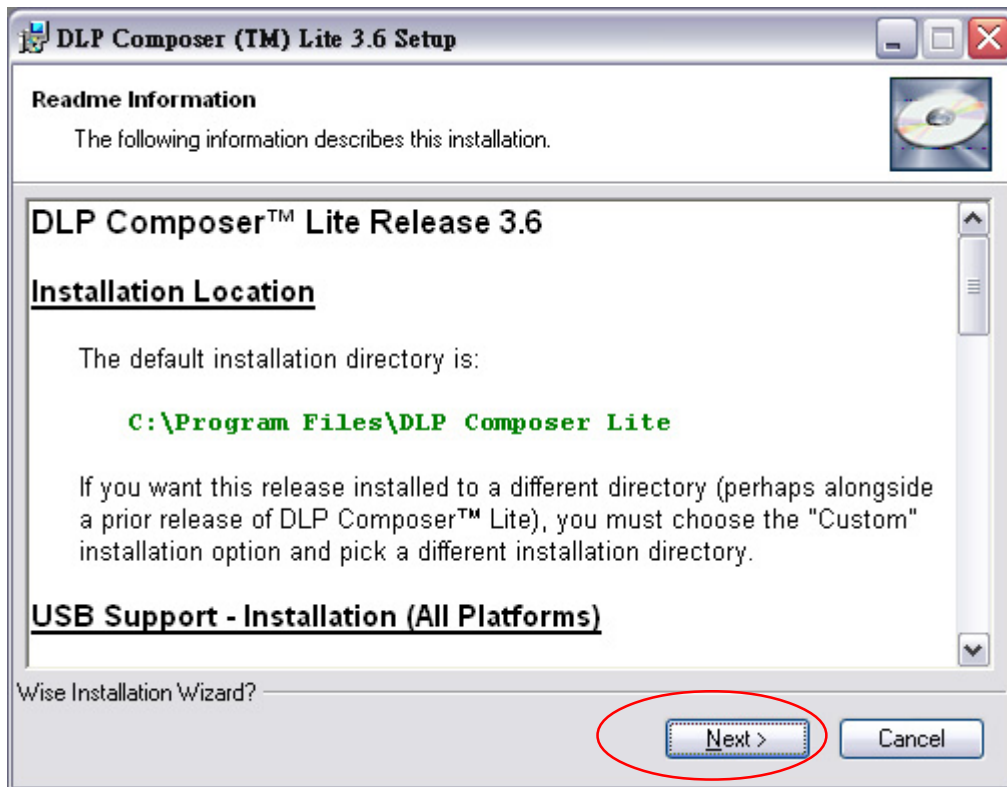
Step 2. Click “Next” button.



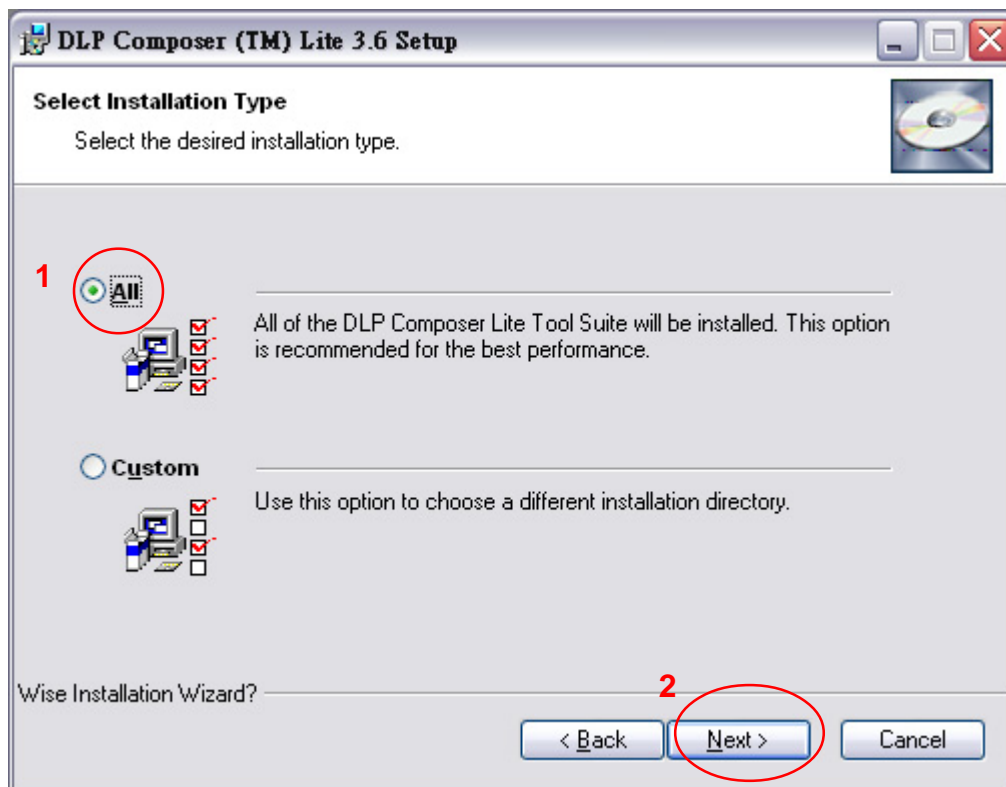
- Step 3. Reading the “License Agreement” rules, choose “I accept and agree to be bound by all the terms and conditions of this License Agreement” icon, then click “Next” button.



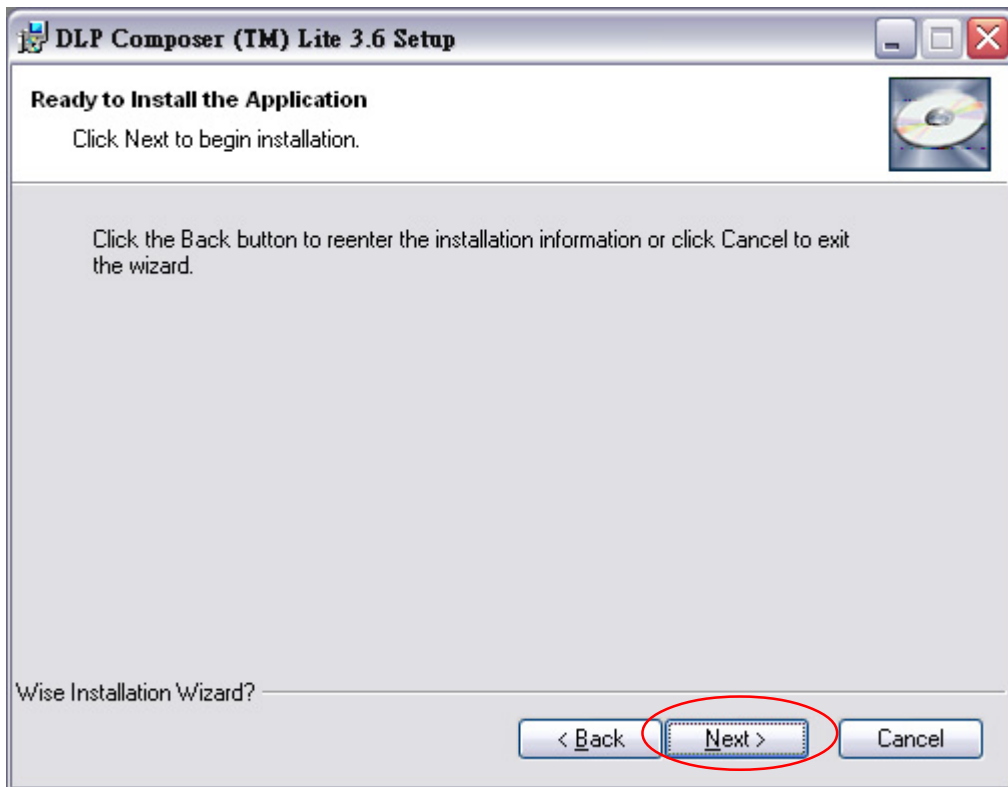
Step 4. Click “Next” button.



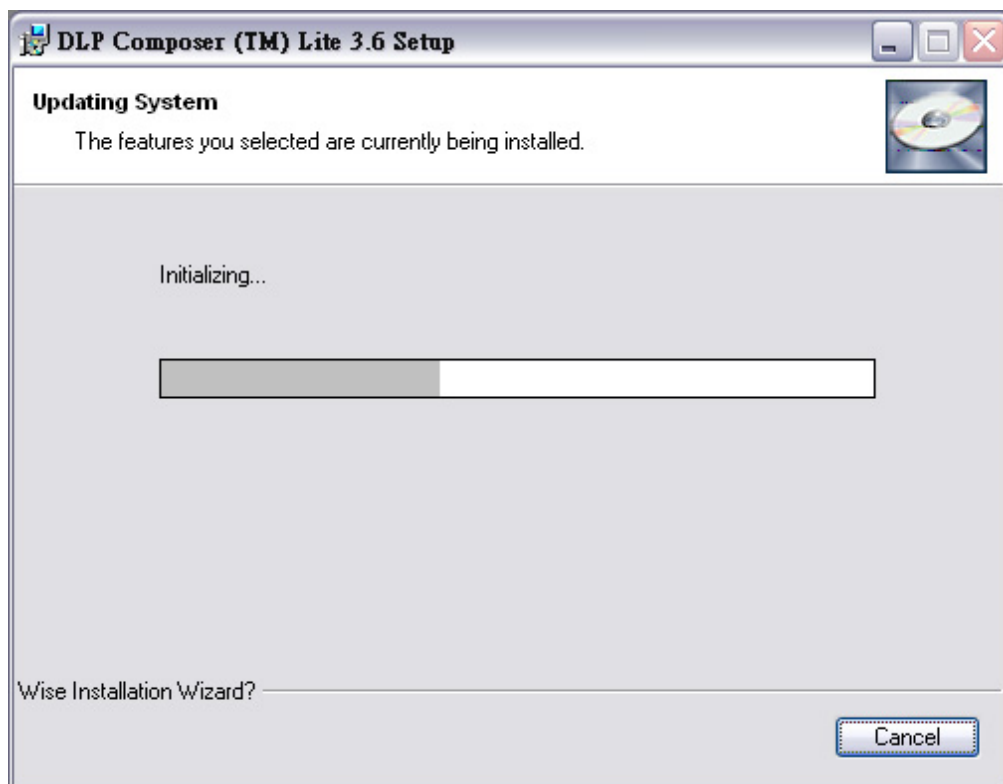
Step 5. Choose “All” icon, then click “Next” button.



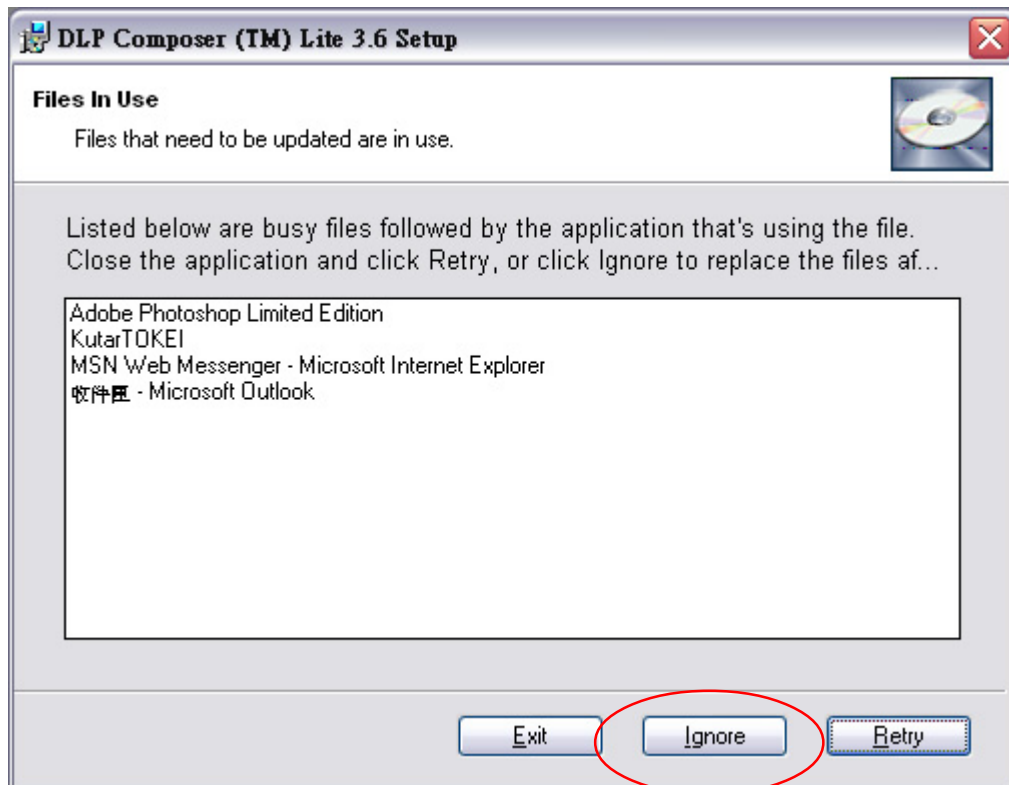
Step 6. Click “Next” button.



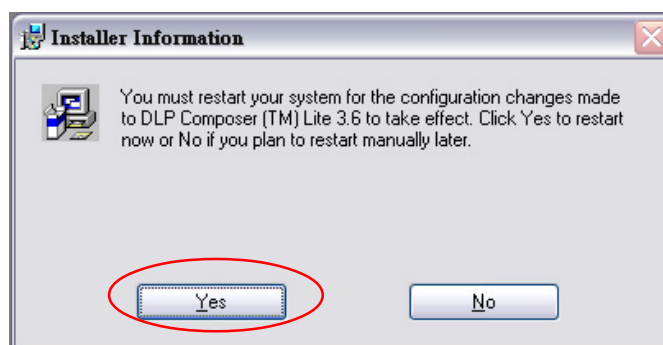
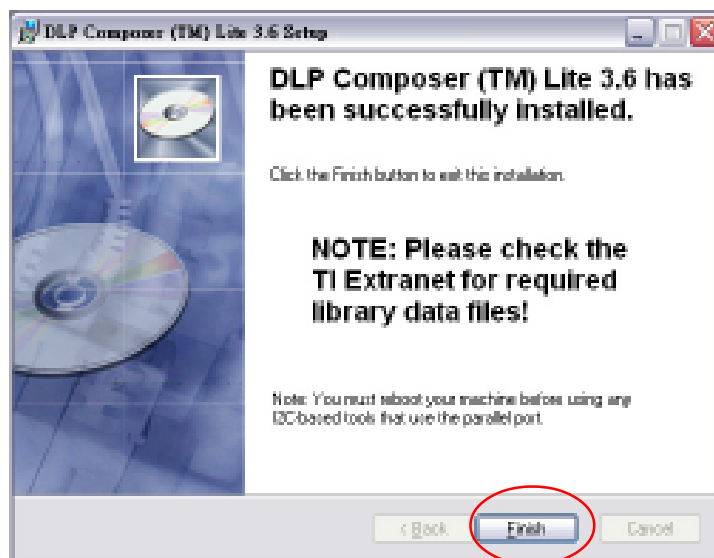
Step 7-1. The program is executing “Initializing” status.



Step 7-2. If the screen is show the below message, please choose “Ignore” button.



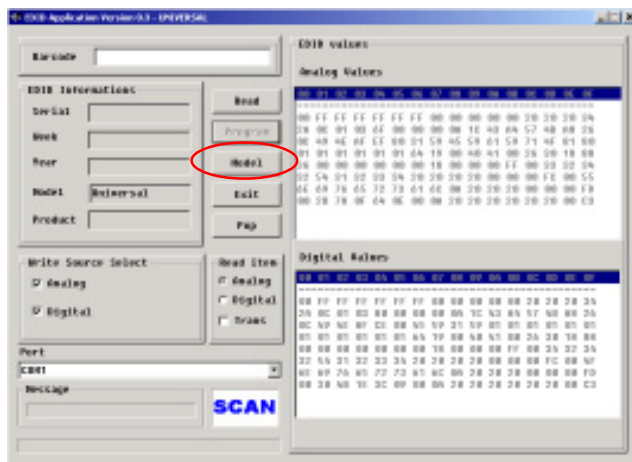
Step 8. Click “Finish” button , then click “Yes” button to restart your computer.



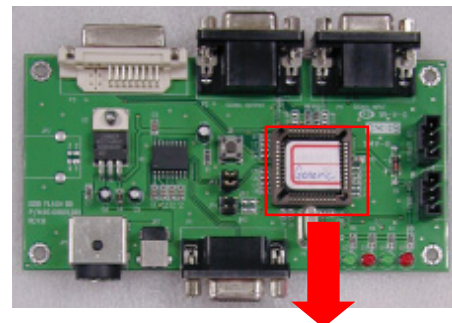
Appendix D The Comparision of EDID Fixture

How to identify EDID program?

The new EDID program will show “Model” button, and the EDID fixture will printed “**Generic**” on the IC.



EDIDprogram

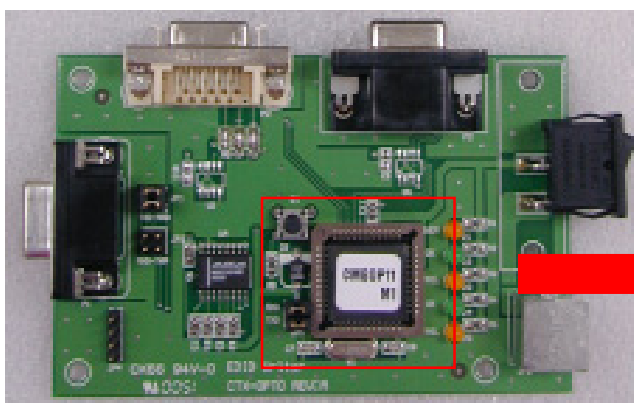


EDIDfixture



IC

The old EDID program will not show “Model” button, and the EDID fixture will printed “**CMBDP11 M1**” on the IC.



EDIDfixture

IC



Reader's Response

Dear Readers:

Thank you for your backing our service manual up. In order to refine our content of the service manual and satisfy your requirement. We expect you can offer us some precious opinions for reference.

Assessment:

A. What do you think about the content after reading H27 Service Manual?

<i>Unit</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Introduction				
2. Disassembly Procedure				
3. Troubleshooting				
4. Function Test & Alignment Procedure				
5. Firmware Upgrade Procedure				
6. DDC key-in Procedure				
7. Appendix				

B. Are you satisfied with the H27 service manual?

<i>Item</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinion or suggestion about this service manual?

Reader's basic data:

Name:		Title:	
Company:			
Add:			
Tel:		Fax:	
E-mail:			

After your finishing this form, please send it back to Coretronic Customer Service Dept. by fax: 886-3-563-5333.